

**TMS-11 System
Manager's
and User's Guide**

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CHAPTER 1

INTRODUCTION

1.1 PURPOSE

This manual provides a description of the Typeset-11 system and explains how to use the system. A description of all Typeset-11 commands and examples showing how to use them are provided for the System Manager and Users.

1.2 COMPANION DOCUMENTS

The following documents pertain to the Typeset-11 system. These manuals are not required for normal Typeset-11 operation, but some users may want them to enhance or extend their systems operation and capabilities.

Document Title	Document Number	Description
Introduction to RSX-11D	DEC-11-OXINA-A-D	An introduction to the talents, capabilities, and features of RSX-11D.
RSX-11D Operations Procedures	DEC-11-OXDOA-B-D	A description of RSX-11D Monitor Console Routine (MCR) commands and how to use them.
RSX-11D Concepts and Capabilities	DEC-11-OXDCA-B-D	A presentation of the application and programming of RSX-11D systems.
RSX-11D System Generation Reference Manual	DEC-11-OXDIA-B-D	Provides information to generate systems (programs) to operate under RSX-11D executive.
RSX-11D Executive Reference Manual	DEC-11-OXERA-A-D	Provides information about control and operation of the the RSX-11D executive.
RSX-11D I/O Operations Reference Manual	DEC-11-OXFSA-A-D	Provides RSX-11D operator information and a description of all RSX-11D commands.
RSX-11D Utility Operations	DEC-11-OXUPA-A-D	Provides a description of all RSX-11D utility programs. (PIP, VERIFY, FILEX).
RSX-11D Task Builder Reference Manual	DEC-11-OXDLA-B-D	Provides information to generate RSX-11D tasks to operate under the RSX-11D system.
RSX-11D Debugging Techniques	DEC-11-OXDDA-B-D	Provides the programmer with information to debug programs generated to operate under RSX-11D.

Document Title	Document Number	Description
RSX-11D Device Handler Reference Manual	DEC-11-OXDHA-A-D	Provides information about the RSX-11D Device Handler Programs.
RSX-11D Writing Device Handler Task	DEC-11-OXPHA-A-D	Provides information to write RSX-11D Device Handler Programs
RSX-11D MACRO Assembler Reference Manual	DEC-11-OXDMA-B-G	Provides information for the user to write program in MACRO language.
RSX-11D FORTRAN IV Compiler and Object Time System Reference Manual	DEC-11-OXFMA-C-D	Provides information for RSX-11D users to write source programs in FORTRAN, the source program for RSX-11D.
RSX-11D System Test Reference Manual	DEC-11-OXSTA-B-D	Provides timing information about RSX-11D performance.
RSX-11D System Generation and Installation Guide	DEC-11-OXDIA-A-D	Defines the procedures used to install, update, and test an RSX-11D system.
PDP-11/45 Processor Handbook	112.01071.1876	A detailed description of PDP-11/45 hardware and software to assist programmers, engineers, and operators in the operation of the PDP-11/45 computer.
LA30 DECwriter Maintenance Manual	DEC-00-LA30-D	General information about operation, installation and maintenance of the LA30 DECwriter.
RP11 Disk Pack Controller Maintenance Manual	DEC-CS-RP11-D	A complete description of the RP11 Disk Pack Controller.
Typeset-11 VT20 Operator's Guide	DEC-11-HVT20A-A-D	Provides user information required to operate the PDP-11 Text Editing Option.
Typeset-11 Markup Manual	DEC-11HMUPA-A-D	Provides information for the user to create format and mark up copy for typesetting
Typeset-11 System Error Messages Manual	DEC-11-HSYEA-A-D	Provides a description of the error messages generated by the system and general recovery techniques.
Typeset-11 Class Ad System User's Guide	DEC-11-HCADA-A-D	Provide information for using the classified ad system

1.3 DOCUMENTATION CONVENTIONS

1.3.1 Carriage Return

A carriage return (the CR key) is always typed at the end of a command string to indicate that the command is complete. The carriage return notation used in this manual is the symbol <CR>. These angle brackets are for clarity only, and should not be typed.

1.3.2 Blank Spaces

No symbol is used in this manual to denote blank spaces.

1.3.3 Braces

Braces [] are used to indicate that a choice must be made from the enclosed information or that the use of the feature is optional.

1.3.4 Angle Brackets

Angle brackets < > are used to enclose the keys where necessary for clarity throughout the manual, but the brackets are not typed.

For example, <RUBOUT> means the RUBOUT key.

1.4 CONTROL CHARACTERS

Control characters such as are typed at the system console only (not at the vt20) by holding down the CTRL key and depressing the letter C. The angle brackets should not be typed. The Typeset-11 system control characters are listed in Table 1-1.

1.5 VT20 COMMAND MODE

The © symbol is used before all commands that can be used on the VT20 to indicate that the VT20 must be in the command mode when the command is given. The © symbol, followed by a line of dots, is displayed on the VT20 screen when the <CMND> key is depressed; the key is lit to indicate that the VT20 is in the command mode. If the VT20 is already in command mode, depressing the <CMND> key will cancel command mode.

Table 1-1
Typeset-11 Control Characters

Control Character	Function
<CTRL C>	Wake up the Monitor Console Routine. If no operator commands are entered at the MCR terminal, after approximately one and one-half minutes, the keys on the terminal are disabled and <CTRL C> must be typed to reactivate the terminal.
<CTRL Z>	Quit the mode that is presently in operation and return to MCR mode. For example, if the user is doing PIP functions and wishes to return to MCR, he would type <CTRL Z>. The previous operation must be completed and a response printed at the terminal, i.e., PIP> before this will work.
<CTRL O>	Stop timeout of information on the terminal. This is normally used during startup and shutdown operations to stop printout of information at the MCR terminal.
<CTRL R>	At the terminal type out the line of commands just entered.
<CTRL U>	At the terminal cancel the line of commands just entered.
<ALT>	Deactivates the LA30 (disables LA30 keys). <CTRL/C> must be typed to reactivate the terminal. <ALT> is used instead of <CR> for some special MCR commands.



CHAPTER 2

SYSTEM MANAGER'S INFORMATION

2.1 SYSTEM DESCRIPTION

The Typeset-11 System is a large volume, multi-task processing system, which allows copy preparation (inputting, editing, processing, and outputting), data flow control, and system management operations to occur simultaneously. An entire publication can be stored, proofed, edited and corrected, or revised before the text is phototypeset.

Proof copies can be output on a high-speed line printer. Copy editing and rearranging is done off-line at the VT20 Display Terminal using the computer's time for data transmission only. The final text is output to an on-line photocomp machine or paper tape punch. The production cycle of the system (Figure 2-1) consists of the following steps:

1. Story Markup
2. Input Tape Preparation or File Creation
3. Processing of Files by J and H Program
4. Proofreading
5. Correcting
6. Reprocessing by J and H if necessary
7. Output Tape Preparation (Final Punch) or Output to an on-line Photocomp Machine

Copy may be coded in advance for the perforator operators by the markup personnel. Input tapes are prepared from the coded copy by the perforator operators. The tapes are read into the system via the high-speed tape readers and stored on disk packs for editing at the VT20.

The Typeset-11 System consists of a combination of programs (software and hardware) which are integrated into a typesetting system. All of the programs in Table 2-1 operate under an executive program called the RSX-11D Operating System. RSX-11D allocates the use of the central processor's time and

schedules jobs so that many operations can be performed simultaneously. This type of operation is called timesharing.

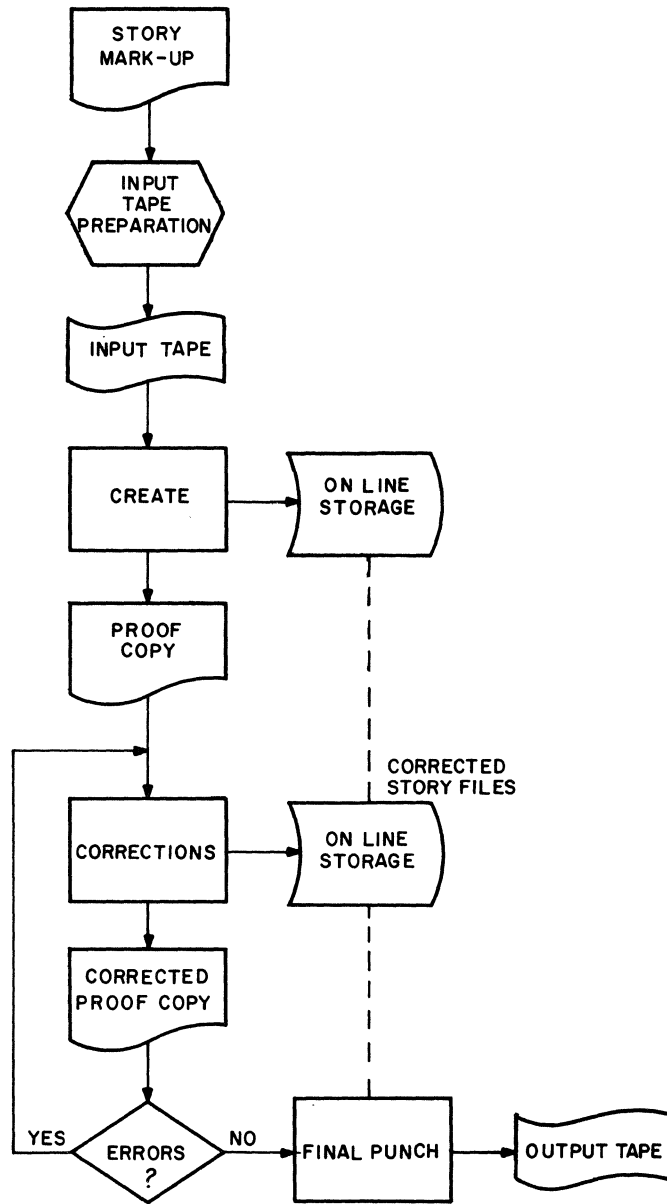
2.1.1 The Monitor Console Routine

The interface between the Typeset-11 programs and the RSX-11D system is provided by the Monitor Console Routine (MCR). MCR dialogue is established by typing <CTRL/C> on the system console. This causes an MCR Dispatch Task to run, which outputs an MCR> prompting symbol and reads a line of command input. The command input line indicates the function to be performed and contains parameters when necessary. The Dispatch Task causes an MCR Function Task to run which performs the requested function. There is one MCR Function Task for every MCR function. If the system is running an MCR Task, which uses the MCR console to carry on a further dialogue with the user, typing <CTRL/C> on the console will not cause MCR> to be printed out. The user must wait until the previously requested task is completed.

The Typeset-11 System has MCR functions to provide system status, perform task scheduling, change logical unit assignments, etc.

2.1.2 System Terminals

There are two types of terminals in the system. The MCR terminal may be an LA30 DECwriter or a VT05. It is recommended that use of the MCR terminal be limited to the system manager. All RSX-11D and Typeset-11 commands except Create and Edit may be given from this terminal. The VT20 terminal is normally used for edit operations, some input/output operations, and utility operations (i.e., directory) that are listed in the VT20 Users Guide. The system manager may use this terminal for some of his control and supervisory functions. The VT20 cannot be used to issue RSX-11D commands.



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Figure 2-1 Typical Production Cycle

**Table 2-1
Typeset-11 Programs**

Program	Function
Queue Manager	The Queue Manager program is the controller of the system, building and maintaining queues for the transmission of requests between component tasks (Spoolers, J and H, and the VT20 terminal program.)
Spoolers	The Spooler programs handle all input/output activity for sequential character devices (paper tape readers, punches, photocomps, and line printers).
Handlers	Handlers are special tasks under RSX-11D that control the actual machine input/output.
Application Monitor	The Application Monitor controls VT20 terminal processes and provides functions for file control, editing functions, and queue operations.
VT20 Software	The VT20 software consists of the programs in the PDP-11/05 processor that control two VT20 terminals and communicates with the main computer while editing story files.
J and H	J and H will accept a stream of input files from the JAH queue and determine the proper word breaks and line endings for text to be set on a photocomp machine.
CLASS-AD Management System	This is an optional system that may be added to the software system, enabling the user to maintain ads in a data base.
Allotter	The Allotter is a program that maximizes the effectiveness of the photocomp spooler, i.e., it routes files to an available photocomp with the appropriate setup to handle the file.

2.2 SYSTEM CONFIGURATION

A typical Typeset-11 hardware configuration (Figure 2-2) consists of the following:

PDP-11/45 central processor unit with at least 80K of memory.

VT20 Text Editing Subsystem for edit and file manipulation operations. Each VT20 subsystem has two display terminals.

LA30 DECwriter or VT05 video display terminal system control and monitoring.

RP11C controller with two RP03 disk pack drives.

RF11 controller with RS11 fixed head disk drive for program storage.

TM11 controller with TU10 magnetic tape drives for program loading and data backup.

PA611 controller with dual PR68 paper tape readers and PP67 paper tape punches.

LPD11/LPC01 photocomposition interface that is designed and configured for the user's photocomposition machine.

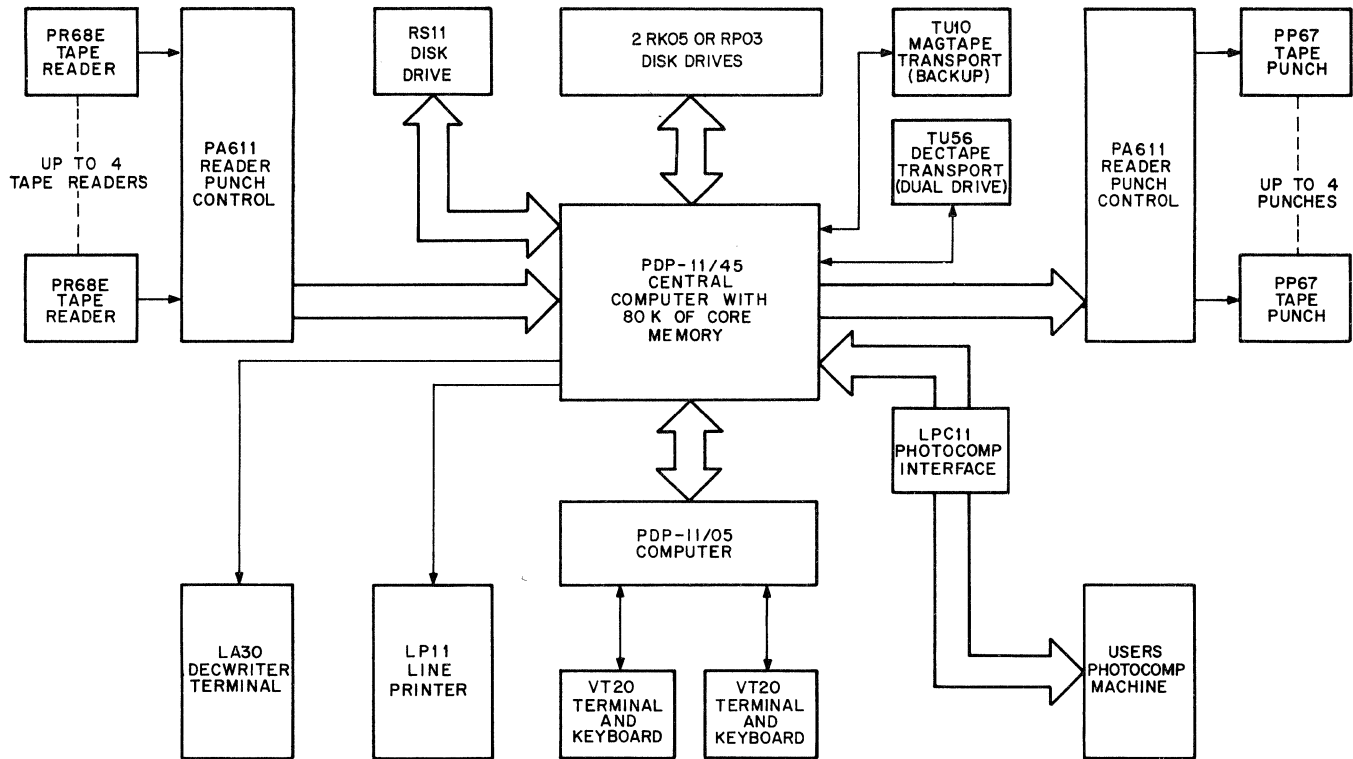
LP11 or LV11 column line printer to provide proof copy for editing.

2.3 INPUTS

The Typeset-11 System supports multiple inputs from the following sources:

1. Paper tape input prepared by a perforator operator.
2. Wire service communications (via paper tape).
3. Optical Character Readers (OCR) via paper tape.

Data from keyboard perforators or OCR is expected to be in TTS code, which is customized for each user's system. The input spoolers use customized tables to convert the input data, which is in TTS code, to the standard ASCII code used by the Typeset-11 System. The data is stored on the system disk as files, under names specified in a header punched in front of each story (Appendix I). The area in the directory



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Figure 2-2 Typical Typeset-11 Hardware Configuration

may also be defined for each input device by default so that all stories from a particular input device are sent to a specified user area.

Copy from wire service is also input to the system on paper tape. Wire service stories are automatically stripped to remove all justification and hyphenation. The copy is then handled as any other copy, i.e., stored for editing on the VT20 and routed automatically to justification and hyphenation. Defaults may be set up to route the justified and hyphenated copy to a photocomp machine or to the disk for storage.

Filenames for wire service stories are structured to differentiate between AP and UPI services. The header of a wire service story identifies which service is sending the story; the Typeset-11 system appends either the letter A (for AP) or the letter U for (UPI) to the beginning of the filename. Thus, if story A104 is from the AP wire service, the filename becomes AA104.WIR:1. If a story from UPI happens to have the same name, the filename becomes UA104.WIR:1.

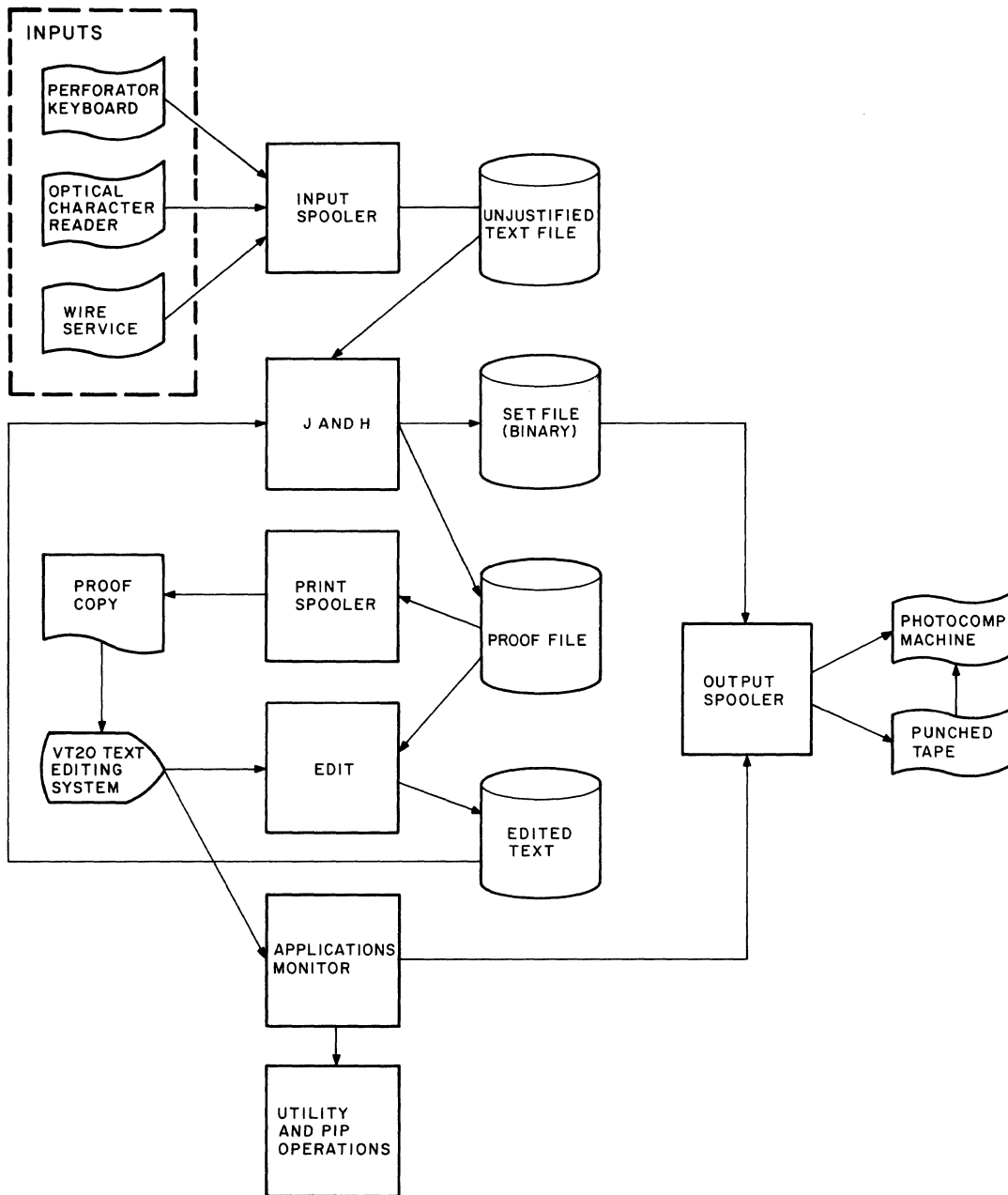
Notice that both wire services are input with a .WIR extension and a version number of 1.

Some wire service stories are received in advance of the date they are to be released. If specified at installation time, a file storage option can be included that routes advanced wire service stories to the local pool UIC. This allows wildcarding to be used for renaming advance files to a wire service advance pool.

2.4 EDIT FUNCTION OPTIONS

Two edit function options are available and must be specified at installation. When a file is edited, the new version(s) can either remain in the UIC area logged into or, if the file resides in another UIC area, it can be returned to that area. For example, if a file (STORY.HOT:1) is created in UIC [20.4] and a user logged into [77.1] wishes to edit that file, the edited version can either remain in [77.1] or return to [20.4] depending on the system file flow structure.

Typical file flow for a Typeset-11 system is shown in Figure 2-3.



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Figure 2-3 Typical File Flow



CHAPTER 3

FILE IDENTIFICATION AND ACCESS

Each job, or take, on the Typeset-11 system is stored as a file. Since each user may have many files, there must be a method for keeping all of these files separate. This is accomplished by giving each user a unique area in the data base of the system. This area is identified by the user's group-and-user number. For example, if the group-and-user number is 1,3 the user has an area in the data base identified by that number. Each file created or each file input to the system on paper tape with that group-and-user number goes to the corresponding area and is uniquely named. The group-and-user number is also referred to as the User Identification Code.

3.1 FILE NAMING CONVENTIONS

Each file is assigned a device, group-and-user number, and filename. The device is the name of the piece of hardware where the file is stored; the group-and-user number is the area assigned to the user. The file name is the actual name of the file, and the file extension (file type) indicates what category the file is associated with. The file name and the file extension are separated by a period. The extension is followed by a semicolon and a version number. The Typeset-11 files are identified as follows:

FILE = DEV:[G,U]FN.EXT;VER where:

DEV = device and unit number as follows (default = system disk, unit 0):

DPx	RP03 Disk
DFx	DF11 Disk
MTx	Magtape Drive

x is the unit number of device

[G,U] = group and user number
(default = logged in user).

FN = file name with up to 9 alphanumeric characters.

EXT = file type with up to 3 alphanumeric characters (default = command dependent).

VER = version number (default = latest version).

Since files are identified by their name and their group-and-user number, two users may use the same filename as long as they have different group-and-user numbers. The files will be distinct and separate. Following are some filename examples:

BOSTON.MON;1

JERRY.TUE;4

STORY.SUN;1 Three versions of the same
STORY.SUN;2 story stored in separate files.
STORY.SUN;3

The file extension could be used to indicate the date the information in the file is to be printed. For example:

EXTENSION	POSSIBLE MEANING
.SUN	Sunday
.F5	February fifth
.M2	Monday second edition

Identifying stories that are printed on a certain day is helpful during housekeeping operations. For example if all stories that are used in the Monday edition of a paper have a .MON extension, the user can delete all of these files with one simple command.

A new version number is assigned to a file each time a file change operation takes place, (i.e., EDIT, JAH). The file with the highest version number is always the latest file. If no version number is specified when a command is given, the latest version number is automatically used.

Paper tape filenames are assigned to a file when it is punched on paper tape by the perforator operator (See Appendix I for tape formats). When the paper tape is input to the system the leader contains the file name, extension, and the group-and-user number. If no extension is supplied when the file is input the system supplies a .PRF extension. This information is recorded in the directory so that the file can be retrieved when the user is ready to edit the file. If no UIC is supplied, the file will be stored in the user area associated with the input device.

3.1.1 Wild Card Conventions

In order to provide an efficient method for referencing multiple files, a 'wild card' feature is included in Typeset-11. The wild card is the asterisk (*) which is used to signify any file name, file extension, or version number.

For example, in order to delete file FILA.SUN;4 from the system the following command is required:

```
©DE FILA.SUN;4<CR>
```

In order to delete files:

```
FILA.MON;1  
FILB.MON;2  
FILC.MON;1
```

it is only necessary to provide the command:

```
©DE *.MON;*<CR>
```

where the asterisk (*) means all files in the user's data base, with the file extension .MON, regardless of file name or version. This could be used to delete all files with a particular .day extension.

Alternatively, the command:

```
©DE FILA.*;*<CR>
```

means delete all files in the user's data base with a file name of FILA, regardless of the file extension or version, and the command:

```
©DE *.*;*<CR>
```

means delete all files in the user's data base regardless of file name, file extension, or version.

Table 3-1 lists the VT20B commands and indicates whether wild card features can be used or not. Also included is default and multiple file information.

3.2 FILE PROTECTION AND ACCESS

File Protection and access is determined by the group-and-user number (UIC) and passwords (Figure 3-1). The UIC is a sequence of two numbers represented as G,U where both G and U are from one to three digits. The first number, G, represents a group and the second number, U, represents an individual user in that group. Each UIC represents an area where the group and user may store files. There are four levels of UIC codes:

1. System Manager: Privileged to read, write, and delete files in any user area.
2. Controllers: Privileged to read, write, and delete files in any area in their newspaper.
3. Supervisors: Privileged to read, write, and delete all files in their group's user area(s).
4. Operators: Privileged to read, write, and delete files in their unique area.

Files in the common pools (Figure 3-1) may be read (copied) by users in any area. The System Manager is the only user who can copy files back into these areas.

Files that are not assigned a UIC when they are input to the system are input to the newspaper pool and may be accessed by anyone in that newspaper. The controller or supervisor may assign these files to an operator after they are in the system, and the operator can copy them into his area.

**Table 3-1
File Syntax Summary by Command**

Command	Wild Carding Allowed			Multiple Files Allowed (commas)	Version Default Allowed (latest)	Ext. Default (if any)
	File Name	Extension	Version Number			
AP	YES	YES	YES	YES	YES	
C	NO	NO	NO	NO	YES	.PRF
CO	YES	YES	YES	YES	YES	
D	YES	YES	YES	YES	YES	
DE	YES	YES	YES	YES	NO	
E	NO	NO	NO	NO	YES	.PRF
EX	YES	YES	YES	YES	YES	
J *	NO	NO	NO	YES	YES	.PRF
ME	YES	YES	YES	YES	YES	
P	NO	NO	NO	YES	YES	.PRF
PRO	YES	YES	YES	YES	YES	
PU	NO	NO	NO	YES	YES	.SET
Q	NO	NO	NO	NO	YES	
R	YES	YES	YES	YES	YES	
S	NO	NO	NO	YES	YES	.SET
UN	YES	YES	YES	YES	YES	
US	NO	NO	NO	NO	NO	

* Includes all justify commands

The recommended UIC codes are (See Figure 3-1):

Function	Group	User
System Manager	1	10
Newspaper File Pools	300-367	1-377
Common Pool	370-377	1-377
Controllers	3-7	1-377
Supervisors	20-277	1-377
Operators	20-277	10-377

The following UICs are for DEC use and are not assigned to a Typeset-11 user:

- a. 1,1-377 except 1,10 which is assigned to the System Manager
- b. 2,1-377
- c. 11-17,1-377

A password is assigned to each authorized user. The password consists of from one to five alphanumeric characters assigned to each UIC. Passwords are non-printing, that is, they do not appear on the Teletype, DECwriter, or VT20 terminal during log-in. Passwords are not normally required at the MCR console (Teletype or DECwriter).

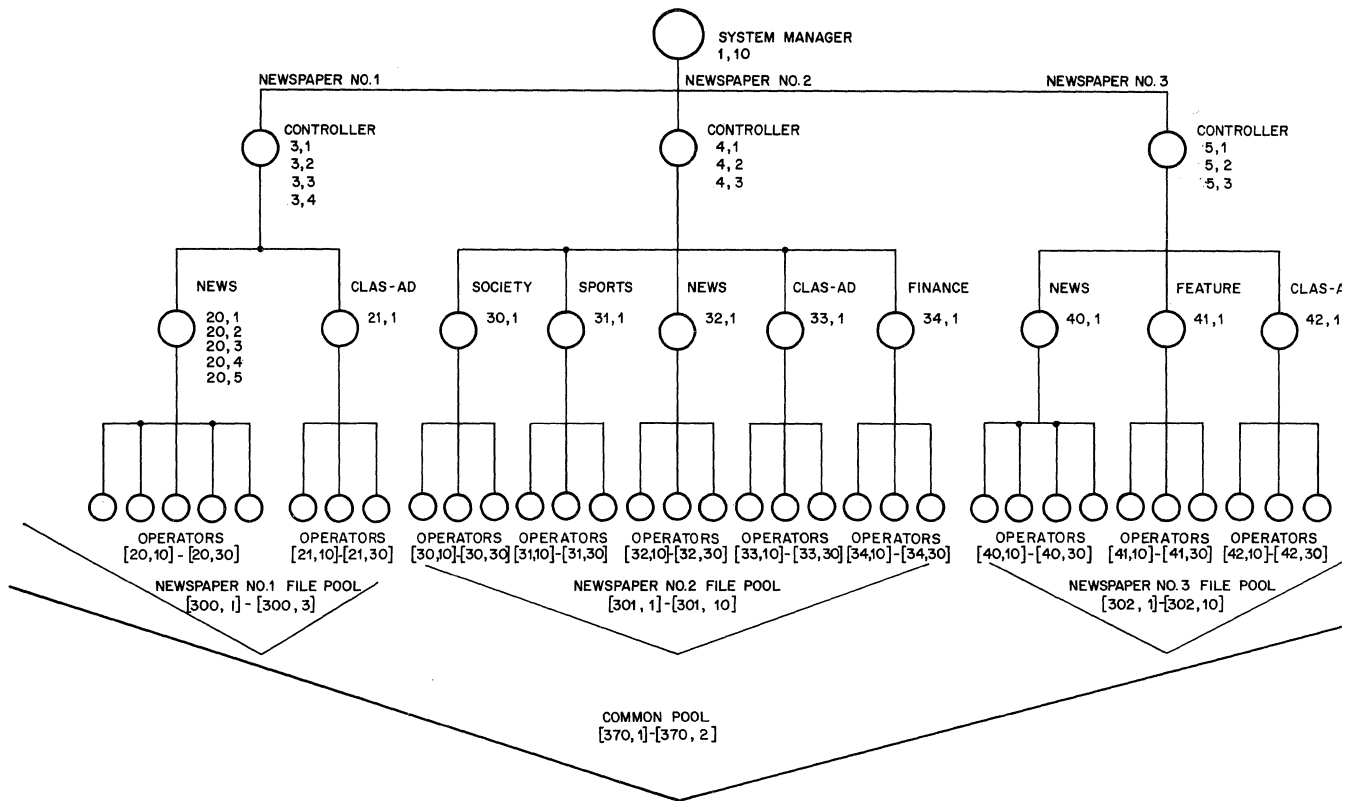


Figure 3-1 Example Of File Access Hierarchy

3.3 FILE FLOW

Each file that is input to the system is assigned a file name, extension, and group-and-user number and may produce (depending on data flow options) up to three files (Figure 3-2) as follows:

1. An unjustified proof file which can be called to the VT20 terminal for editing. The version number for this file is 1.
2. A justified proof file that can be edited. This file is assigned version number 2. The line printer will automatically print a copy of this file if data flow defaults require it to be printed.
3. A file with a .SET extension in machine code that can be output to the Photocomp machine. This file is assigned version 1.

When the operator calls a file to the VT20 to be edited, the system automatically creates a new version of the file. As an example, if a file called JOE.MON;3 is edited, a new file called JOE.MON;4 is created. After the VT20 operator completes his editing operations both the edited version (JOE.MON;4) and the old file (JOE.MON;3) are retained.

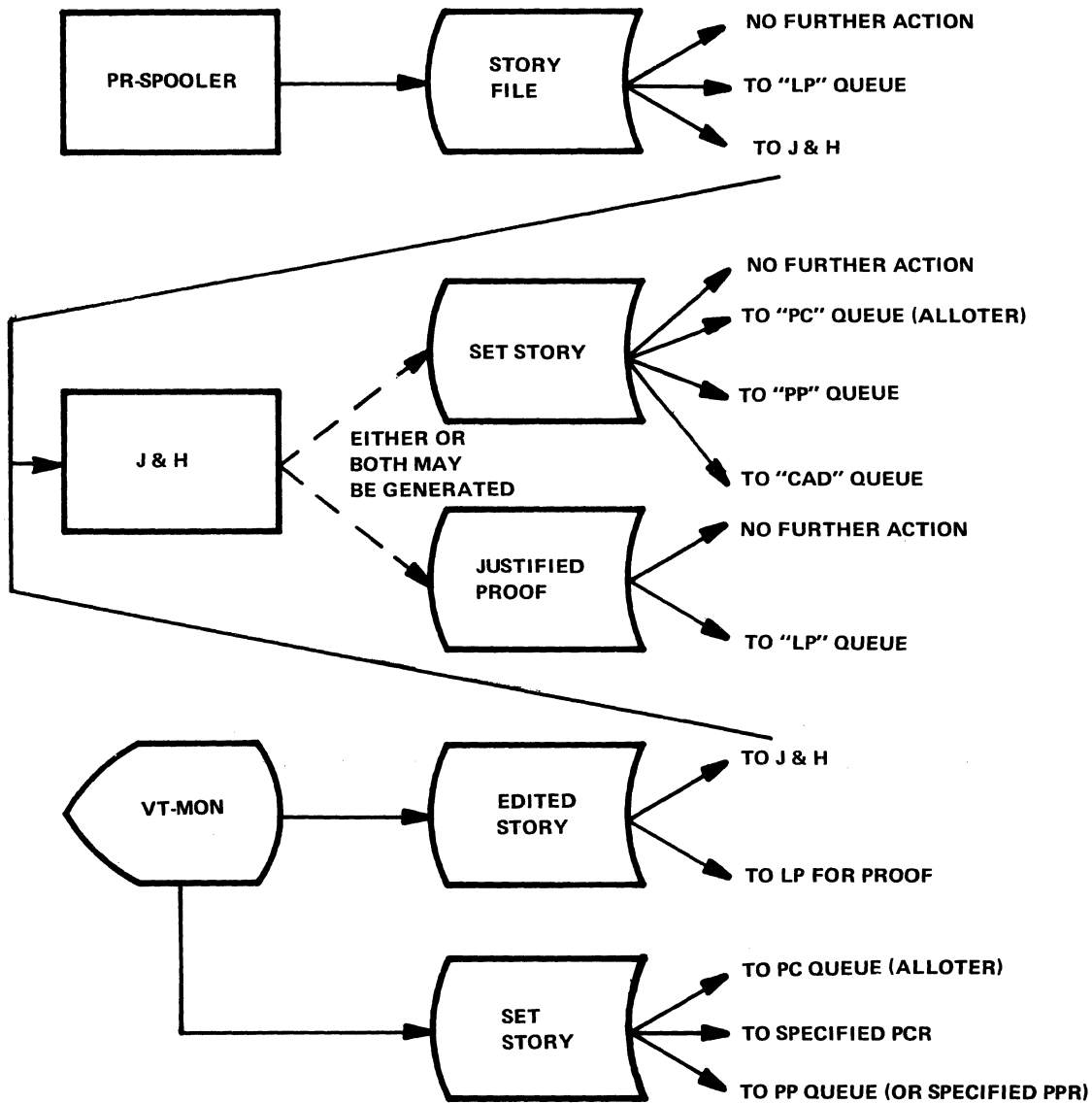
At the end of the edit cycle the operator would normally justify the edited version of the story and two more files are generated in the process. As shown in file flow (Figure 3-3), the justify command produces a justified proof file called JOE.MON;5 and a new JOE.SET;1 file. The old JOE.SET;1 file is deleted. A copy of JOE.MON;5 is printed on the line printer if the data flow defaults require it to be printed.

3.4 FILE FLOW OPTIONS

Data flow through the Typeset-11 system is customized and controlled by the user to select one of several paths through the system (Figure 3-2) with a minimum of commands. For example the command to have a file processed by J and H may provide options to specify the file to be output to a photocomp machine, paper tape punch, or line printer. The .SET file will always be produced and may optionally be queued to any output device, or not at all. A file may also be marked for deletion after successful output.

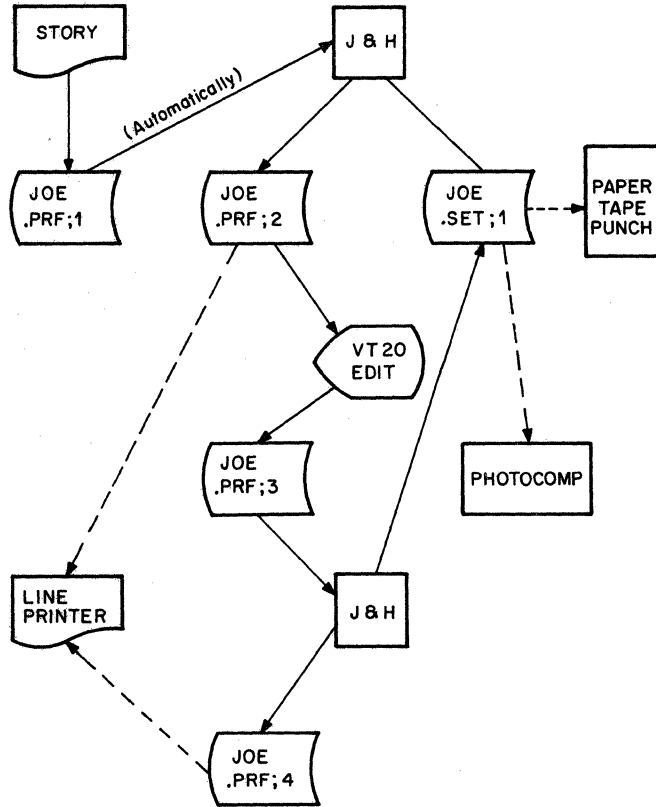
3.4.1 Routing Files Using Justify Command

The justify commands request that a file be assigned to the JAH queue for processing by the JAH Spooler. Different versions of this command determine the subsequent data flow for the file that has been justified. The JAH commands, switches, and subsequent data flow are described in Paragraph 4.4.3.



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Figure 3-2 File Flow Options



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Figure 3-3 File Flow Options

3.4.2 Routing Files From Input Tapes

Switches may be appended to a filename when a file is input to the system to specify the route the file will take and the processing required. For example:

FILE/PF

where /PF is the switch that will queue the input file to the line printer queue and a line printer copy will be printed of FILE. These switches are appended to the filename on the paper tape (Appendix I) when the tape is input to the system. The switches used for data flow controlled by the input tape are as follows:

Switch	Operation
/JC	Queue to J and H and queue the .SET and proof files to CLASS AD as an insert.
/JH	Queue FILE to J and H but do not queue resulting .SET or proof file. .SET and proof are stored on the disk until the user types a command to process the file.
/JP	Queue to J and H and send the proof file to the line printer.
/JS	Queue FILE to J and H and send the .SET file to PC (photocopy) queue. Do not print a proof copy on the line printer.
/JT	Queue FILE to J and H and queue the .SET file to PP (paper tape punch) queue. Do not print a proof copy on the line printer.
/NO	Queue nowhere. This overrides the system default so that the file will not follow the file flow which has been established for the system when routing is not specified by switches.
/PF	Print a copy of the input file on the line printer.
/PR:x	Assigns a priority for the operation where x is a number from 0 to 255. If the number is issued from the VT20, it is a decimal number, otherwise, it is an octal number unless a period (.) is included.

3.4.3 System Flow By Default Standards

Copy preparation and processing is greatly speeded through use of system default standards. System flow options are predetermined by system defaults customized for each user. One user may desire that a line printer proof be generated for all copy input to the system while another user desires proof copy on only selected inputs.

Different input devices may have different system flow default parameters. Reader 0 input may be sent to the JAH queue and then automatically on to the line printer where a proof is generated, while Reader 1 input may be stored on the system disk with no further processing. The system defaults may be overridden by switches which are appended to the filename when the paper tape is perforated.

CHAPTER 4

QUEUE MANAGER

4.1 QUEUE MANAGER

Typeset-11 incorporates a very sophisticated Queue Manager program. As simultaneous inputs are received by the system and stored on disk files, the Queue Manager automatically assigns them to a dynamic queue according to the action requested. If, for example, the copy is to be justified, it will queue the file to the JAH queue for processing.

Similar queues exist for proofing copies on the line printer and outputting on the photocomp machines or punches. Since operators are not required to wait for completion of a task before they begin another, a true multi-user environment is created. Each user is free to work at a different pace as processing occurs independently.

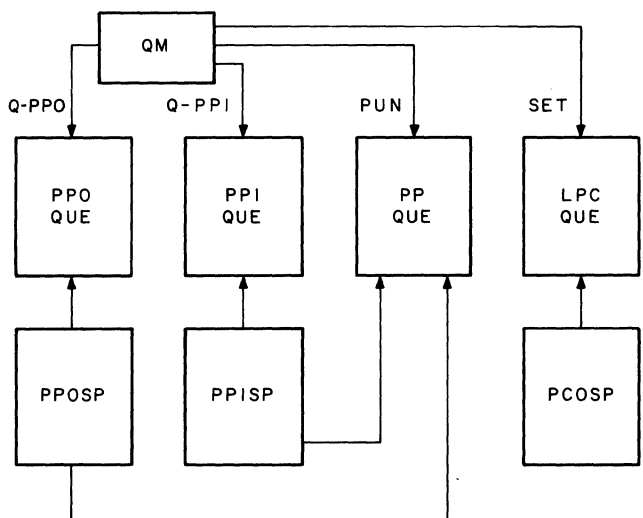
The Queue Manager also maintains a file which has a list of tasks assigned to each queue and the status of that task. In the event of a system crash the queues are rebuilt automatically when the system is restarted.

4.2 QUEUES

All Typeset-11 operations are controlled by the Queue Manager on a priority basis. Normally, a user would not specify a priority and the system would process items in a queue on a first-in first-out basis. To allow the user to send important stories through the system quickly, each entry on a queue has an associated priority. A priority is a number in the range 1 to 255, where the queue entries with the highest priority will be done first. Thus, if we have 2 proofs to be printed on the line printer, one with a priority of 10, and one with 20, the proof having priority 20 will be printed first even if it was placed in the queue later. If no priority is assigned, the system assigns a priority 10 automatically.

A list of queues is given in Table 4-1 and illustrated in Figure 4-1. There are also commands that combine a queue entry with instructions to the associated task to make further queue entries. This allows the user to control file flow. For example, the user may put a file in the JAH queue and with the same command string he may direct this file to an on-line photocomp machine after JAH has completed processing the file.

Queues may be connected to more than one spooler. For example, the PP queue is connected to PPOSP and PPISP so that files in the PP queue may be punched on PP0 or PP1. In fact, they will be punched on the first punch that becomes available. If a file must be directed to a particular unit, a special queue command (Paragraph 4.4.5.1) is used.



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Figure 4-1 Queue Manager, Queues, and Spoolers

When files are directed to a photocomp machine a special routine, the Allotter, controls the PC queue in accordance with the priority assigned to the file and current machine setups. The Allotter will determine the machine setup and film size required to process the file and direct the file to a unit that meets these requirements.

Table 4-1
List of Typeset-11 Queues and Spoolers

Queue Name Mnemonic	Equipment	Spooler
PRx	Papertape Reader	PRxSP
PPx	Papertape Punch	PPxSP
PCx	Photocomp Machine	PCxSP
LPx *	Line Printer	LPxSP
JAH	J and H Joblist	JAH

where:

x = Unit number assigned to the equipment associated with the queue and spooler.

* If system has only one LP, the line printer queue is named LP.

4.3 USING QUEUE COMMANDS

The MCR terminal must be in the OPR mode to use any of the Queue commands. To get in the OPR mode the user must type:

MCR>OPR

and the terminal responds with:

READY

At this time, the user can type in Queue commands. To return to the MCR mode, the user must type <CTRL/Z> or KIL<CR>. To use Queue commands at the VT20, the terminal must be in command mode (©).

4.4 QUEUE ENTRY COMMANDS

These commands are used to enter a file into a queue for processing by the spooler associated with that queue (Table 4-1 and Figure 4-1). The queue entry

command may be used to output a file, process files through J and H, or control the operation of the queues themselves. These commands may be given from the VT20 or MCR terminal. The VT20 must be in command mode (©) and the MCR terminal must be in OPR mode.

Following are some general rules on file names for queue entry commands. The general form for these commands is:

©COMMAND FILES

where COMMAND is the function desired and FILES is the group of stories to which that function is applied. In the most general case, FILES consists of the string:

DEVICE:[UIC]FILENAME.TYPE:
VERSION/SWITCHES.etc.

In order to save keystrokes, the user would not normally type in the complete string, but would take advantage of the system defaults. In particular:

DEVICE: Unless there were some very unusual circumstances, the device is always the default device and does not have to be input.

[UIC] If the story is located in the user's area, this can be omitted. It must be used to access pool files.

FILENAME If the name of the story was the same as the story last queued or edited, this can be omitted. For example, if the user has just printed a story with the command:

©P STORY<CR>

he may decide that it can be justified. In such a case it is only necessary to type:

©J<CR>

.TYPE Most often, the default for each command is correct and this can be left out. The default is specified for each command.

;VERSION Most often the user wishes to operate on the latest version and this can be omitted.

/SWITCHES The important thing to bear in mind here is that the switches on the first file carry over to every file in the list. For example:

```
©PU STORY1/DE,STORY2  
<CR>
```

punches and deletes both STORY1 and STORY2.

.ETC. This is only needed if more than one story is desired. It should be remembered that the last filename in the list determines the new default filename.

4.4.1 Using Command

This command is not, strictly speaking, a queue entry command, but is very useful in conjunction with them. It is used to modify the default extension for the print and justify commands. The format is:

```
©US .EXT<CR>
```

For example, if a newspaper uses the day of the week as the normal story extension, after logging in on MONDAY the user types:

```
©US .MON<CR>
```

To then print a story he types:

```
©P STORY<CR>
```

rather than:

```
©P STORY.MON<CR>
```

4.4.2 Output Commands

This group of commands enters a file into a queue for one of the output devices.

4.4.2.1 Print Command

The default file type is .PRF and can be changed by the USing command.

The Print command is of the form:

```
©P FILE<CR>
```

and causes the file named in the command to be printed out on the line printer.

Example

```
©P FILEA<CR>
```

prints FILEA at the line printer. The Print command may also be of the form:

```
©P FILE1,FILE2,FILE3<CR>
```

to print more than one file with one command string. A switch /SP:x (x is a number 1, 2, or 3) may be added to the Print command string to select spacing of line printer copy.

Example

```
©P FILEA/SP:2<CR>
```

causes the line printer copy of FILEA to be double spaced.

4.4.2.2 Punch Command

The PUnch command is of the form:

```
©PU FILE<CR>
```

and causes the file named in the command to be punched on paper tape.

Example

```
©PU FILEA<CR>
```

This command causes FILEA to be punched on paper tape. The PUnch command may also be of the form:

```
©PU FILE1,FILE2,FILE3<CR>
```

to punch more than one file with one command string. The default file type is .SET.

4.4.2.3 Set Command

The SET command is of the general form:

```
©S FILE<CR>
```

and assigns the file named in the command to the PC queue for output on one of the on-line photocomp machines.

Example

```
©S FILEA<CR>
```

causes FILEA to be output on the on-line photocomp machine. The SET command may also be of the form:

```
©S FILE1.FILE2.FILE3<CR>
```

to output more than one file to a photocomp machine using one command string. The default file type is .SET.

4.4.2.4 Output Command Switches

The /PR (priority) and /DE (delete) switches may be appended to the filename in any of the output command strings. The /PR switch is described in Paragraph 4.5. The /DE switch causes the file to be deleted from the system after it is processed by the spooler indicated in the command.

Example

```
©PU FILEA/DE<CR>
```

causes FILEA to be deleted from the system after it has been punched on paper tape.

4.4.3 Justification Commands

The default file type is .PRF and can be changed with the USING command.

The Justify commands, as a group, cause a file to be processed by J and H. The form of the command determines the routing of files, and whether a proof copy or a line printer copy is generated. All of these commands allow more than one file to be specified (e.g., ©Jx File1, File2, File3<CR>).

where x = the second letter of the command name, if any.

4.4.3.1 Justify Command

The Justify command causes a file to be processed by J and H, generates a proof file and/or .SET file, and routes the file, after processing, as determined by system defaults for a particular terminal.

Example

```
©J FILEA<CR>
```

causes FILEA to be processed by J and H and routed afterward according to system defaults.

NOTE

The /PR and /DE switches for the output command also apply to the Justify commands. The /DE switch, when applied to a justify command, does not mean that J and H is to delete its input file, but rather, that it is to set the /DE switch if any output files are queued.

Other forms of the Justify command and the resulting file flow are discussed in the following paragraphs.

4.4.3.2 JH Command

The JH command is of the form:

```
©JH FILE<CR>
```

and causes the file named in the command to be processed by J and H. A proof file and .SET (justified file) are generated. Neither of the files are queued to an output device.

Example

```
©JH FILEA<CR>
```

assigns FILEA to the JAH queue where it is processed. Two files, a proof file and a set file, are generated.

4.4.3.3 JS Command

The JS command is of the form:

```
©JS FILE<CR>
```

and causes the file named in the command to be processed by J and H. Only a .SET file is generated and the .SET file is assigned to the PC queue for processing by the photocomp machine.

Example

```
©JS FILEA<CR>
```

causes FILEA to be processed by J and H and outputs FILEA.SET to the on-line photocomp machine. If an error occurs during the processing of this file, a proof copy is generated and printed at the line printer, and the .SET file is not queued to the photocomp unless the /OK switch was specified (Paragraph 4.4.4).

4.4.3.4 JT Command

The JT command is of the form:

```
©JT FILE<CR>
```

and causes the file named in the command to be processed by J and H, which produces a .SET file only. The .SET file is output to the paper tape punch.

Example

```
©JT FILEA<CR>
```

causes FILEA to be processed by JAH to generate a .SET file. FILEA.SET is output on the paper tape punch. If an error occurs during the processing of this file, a proof file is generated and printed at the line printer, and the .SET file is not queued to the punch unless the /OK switch was specified (Paragraph 4.4.4).

4.4.3.5 JC Command

The JC command is of the form:

```
©JC FILE<CR>
```

and causes the file named in the command to be processed by J and H and generates a .SET and a proof file. Both files are queued to the CLASS AD data base.

Example

```
©JC FILEA<CR>
```

causes FILEA to be processed by J and H and generates a proof file and a .SET file. These files are queued to the CLASS AD data base. If an error occurs during processing of the file, the proof copy is

sent to the line printer, but the SET file is not queued to CLASS AD as an insert.

The /CH and /NP switches may be appended to the JC command string. The /CH switch causes a file to be sent to CLASS AD as a change to existing ads, rather than as an insert to the CLASS AD data base.

Example

```
©JC FILE/CH<CR>
```

This example is sent to CLASS AD to replace the existing ads contained in FILE, in the CLASS AD data base.

When the /NP switch is appended to the JC command string, no proof file is generated.

Example

```
©JC FILE/NP<CR>
```

This command causes the file to be processed by J and H and the .SET file queued to CLASS AD as an insertion. No proof file is generated and therefore, the text of the ad is not stored in the CLASS AD data base.

4.4.3.6 JP Command

The JP command is of the form:

```
©JP FILE<CR>
```

and causes the file named in the command to be processed by J and H. A .SET and proof file are generated and the proof file is output on the line printer.

Example

```
©JP FILEA<CR>
```

causes FILEA to be processed by J and H. A proof file and a .SET are generated and the proof file is output to the line printer.

4.4.4 Justify Control Switches

The Justification commands in Paragraph 4.4.3 may be further controlled by appending switches to the filename in any of the Justify commands. A switch is

used to modify a command and to change the file flow. The switches which may be used with the Justify commands are as follows:

Switch	Meaning
/DE	Delete the output file .SET or the proof file after the spooler has completed the output operation.
/HP	Generate a proof file but do not queue the proof file, hold the file in storage.
/HS	Do not queue the .SET file, hold the file in storage.
/NP	Do not generate a proof file.
/OK	Send the file to the specified spooler even if there have been warning level errors generated by that J and H.
/PF	Generate a proof file and queue it to the line printer.
/PR:x	Assign a priority x from 1 to 255.

A command using a switch is of the form:

```
©JP FILE/NP<CR>
```

The /NP switch prevents a proof copy from being produced when FILE is processed by J and H.

4.4.5 Queue Control Commands

The queue control commands provide the system manager with the ability to assign files to a particular queue and force the processing to be done on a particular unit. Only the system manager may use these commands.

4.4.5.1 Queue Output Commands

The Queue command is of the form:

```
©Q QUEUENAME = FILE<CR>
```

and assigns the file named in the command to the queue also named in the command, for processing by the spooler associated with that queue.

Example

```
©Q PP0 = FILEA<CR>
```

assigns FILEA to the PP0 (paper tape punch unit 0) queue. If the unit number is not specified, the file is punched on the first free punch.

To output a file to a specific on-line photocomp machine, the command:

```
©Q PCx = FILE<CR>
```

where:

x is the unit number of the photocomp

is used. If the unit number is not specified, the Al-lotter determines the required machine setup for the file named in the command and routes the file to the correct machine.

4.4.5.2 Queue Activation

The command:

```
©Q QUEUENAME/AC<CR>
```

activates the queue named in the command.

Example

```
©Q LP/AC<CR>
```

activates the LP queue and the line printer spooler starts to print files assigned to that queue.

4.4.5.3 Queue Deactivation

The command:

```
©Q QUEUENAME/-AC<CR>
```

deactivates a queue, and the spooler associated with that queue stops processing files upon completion of the item currently in progress. However, files may be assigned to the queue even if it is deactivated. The files assigned to the queue are processed by the appropriate spooler when the queue is reactivated.

Example

```
©Q LP/-AC<CR>
```

deactivates the LP (line printer) queue and the line printer spooler stops printing copies of files assigned to the queue.

4.4.5.4 Queue Manager Exit

The command:

```
©Q/EX<CR>
```

causes the Queue Manager to close out all queues and shut down the Queue Manager. This command is only used in the system shutdown procedure.

4.5 ASSIGNING PRIORITY

The Queue Manager operates on a priority basis so each file is assigned a priority by the user or automatically by the system if the user does not assign one. A priority from 1 to 255 may be assigned to the processing of a file by using the /PR switch when a command is given or the file is input to the system. The intention of this command is to allow hot stories to be processed quickly.

Example

```
©P FILE/PR:100<CR>
```

This example assigns a priority of 100 to FILE when it is dispatched to the LP queue; it is printed before all other files with a lower priority.

If no priority is assigned, the system automatically assigns a priority of 10 to the file.

Priority serves a special function in connection with files for output to photocomp machines. Normally, the spooler sends a cut-film or stop command to a photocomp machine after a given length of film (as desired by the user). However, if any file has been given a priority greater than 128, the spooler will output the cut film or stop immediately. Further, when the Allotter is included in the system, priority allocation is useful. Stories will normally be output to a machine loaded with the minimum correct film width,

restriction is overridden for stories with a priority greater than 128.

Example

```
©S STORY/PR:128<CR>
```

causes the machine to stop or the film to be cut (depending on system defaults) when STORY is output to the photocomp machine.

4.5.1 Modifying File Priority

The priority of a file that is assigned to a queue may be modified by the command:

```
©Q QUEUENAME/MO:x/PR:y<CR>
```

where:

x is the item number of the file
y is the new priority

Example

```
©Q LP/MO:10/PR:100<CR>
```

changes the priority of item 10 on the LP Queue to 100 and it is printed before all items with a priority less than 100.

4.5.2 Removing an Item from a Queue

An item that has been assigned to a queue for processing may be removed from that queue using the command:

```
©Q QUEUENAME/KI:x<CR>
```

where:

x is the item number of the file to be removed

If the item is currently being processed, it will be aborted as soon as the command is input. Item numbers are assigned by the system when a file is assigned to a queue. The item number of a file assigned to a queue may be determined by using the story status commands (Paragraph 4.6.2). The item number of the last item queued is displayed on the VT20 screen.

Example

```
©Q LP/KI:32<CR>
```

will remove item number 32 from the LP (line printer) queue and halt the printing if currently in progress.

4.6 SYSTEM STATUS

4.6.1 System Status Reports

Any user can determine the status of the system or the status of any stories in the system by typing the appropriate Queue command at the MCR terminal or at the VT20. Status listings may be displayed at the terminal or printed on the line printer. These commands are designed to allow the user to select just the portion of the information desired by stringing the appropriate switches together.

4.6.1.1 Abort Status

All system aborts will cause a message to be printed at the MCR terminal when the abort takes place. The item number that produced the error and the spooler which was processing the file when the abort occurred is given. However, to obtain a listing of all aborts that occur during the day use the abort command:

```
©Q/AB<CR>
```

to list at the terminal all abort reports.

Example

```
TASK VT2MON ABORT CODE = 35, PC =
042570 PS = 174000 SP = 000332 R0 = 000015
R1 = 041560 R2 = 002340 R3 = 000001 R4 =
000000 R5 = 000000
```

```
TASK VT3LOG ABORT CODE = 35, PC =
001200 PS = 174000 SP = 000766 R0 = 000023
R1 = 005230 R2 = 000000 R3 = 000001 R4 =
005416 R5 = 000000
```

4.6.1.2 Queue Status

The command:

```
©Q/QU<CR>
```

lists at the terminal the queues, the number of items to be processed by each queue, and whether they are active or inactive.

Example

```
QUEUE: LP TO BE PROCESSED: 10 -- ACTIVE
QUEUE: JAH TO BE PROCESSED: 3 -- ACTIVE
QUEUE: PP TO BE PROCESSED: 1 -- INACTIVE
QUEUE: PP0 TO BE PROCESSED: 0 -- INACTIVE
QUEUE: PP1 TO BE PROCESSED: 0 -- INACTIVE
QUEUE: PC TO BE PROCESSED: 5 -- ACTIVE
QUEUE: PC0 TO BE PROCESSED: 0 -- INACTIVE
QUEUE: PC1 TO BE PROCESSED: 0 -- INACTIVE
QUEUE: CAD TO BE PROCESSED: 0 -- INACTIVE
QUEUE: RUN TO BE PROCESSED: 0 -- INACTIVE
```

4.6.1.3 Spooler Status

The command:

```
©Q/SP<CR>
```

lists at the terminal names of all the spoolers and their status: waiting, not loaded, or processing an item.

Example

```
SPOOLER: LP0SP -- WAITING
SPOOLER: JAH -- PROCESSING ITEM #10
SPOOLER: PP0SP -- WAITING
SPOOLER: PP1SP -- WAITING
SPOOLER: PC0SP -- WAITING
SPOOLER: PC1SP -- PROCESSING ITEM #6
SPOOLER: CADSPL -- NOT LOADED
```

4.6.1.4 Active Queue Listing

The command:

```
©Q/SY<CR>
```

lists at the terminal, queue sizes, items processed, and the number of errors generated.

Example

```
QSIZE = 3/85/500.
ITEM = 515/799.
ERROR = 0.0
```

Queue size consists of 3 numbers; the first number is the current number of unprocessed items on all queues, the second number is the maximum number of unprocessed items on all queues during the day,

and the third number is the maximum number of unprocessed items that can be on all queues before priority allocation is lost. Item consists of 2 numbers: the first number indicates the current highest item number and the second number indicates the highest item number that can be reached before the system pauses to extend the file.

Error is the number of parity errors.

4.6.2 Story Status

The normal default is to list, in brief format the stories the user requested, from this terminal, in the last hour. For this information, use the command:

©Q<CR>

```
Example PC #493. 10. DP0:[200.216]CONTENTS.SET:1
          (VT2MON) DONE 0

PC #494. 10. DP0:[200.216]CHANGE.SET:1
   (VT2MON) DONE 10

LP #499. 10. DP0:[200.200]ROY.PRF:1
   (VT2MON) DONE 0

JAH #500. 10. DP0:[200.200]ROY2.PRF:1
    (VT2MON)
```

To override any of the default conditions, use the select-by-story-name option (Paragraph 4.6.2.1) or the select-by-story-status option (Paragraph 4.6.2.2).

4.6.2.1 Select by Story Name

The status of particular stories in one user area, or a group of user areas, can also be selected. To use this option, simply put in the portions of the story name desired after the Queue command.

Example

©Q[100.100]LST

This command will list stories queued from area 100.100 with the name LST, in the last hour, from the user's terminal.

Example

```
JAH #365. 10. DP0:[100.100]LST.EDI:1 (VT2MON)
      ERROR = QI36

JAH #377. 10. DP0:[100.100]LST.VTI:1 (VT2MON)
      DONE

LP #388. 10. DP0:[100.100]LST.PTI:3 (VT2MON)
    DONE 0
```

4.6.2.2 Select by Story Status

Waiting

The command:

©Q/W<CR>

lists at the terminal all items the user requested, in the last hour, that are not completed (waiting).

Example

```
LP #41. 10. DP0:[200.200]ROY.PRF:1 (VT0MON)

LP #42. 10. DP0:[200.200]ROY2.PRF:2 (VT0MON)
```

Error

The command:

©Q/E<CR>

lists at the terminal all items the user requested, in the last hour, that resulted in an error.

Example

```
JAH #3. 10. DP0:[210.221]LABEL.PRF:5
      (VT3MON) ERROR = A3

JAH #5. 10. DP0:[210.221]LABEL.PRF:6
      (VT3MON) ERROR = A3
```

The error can be interpreted by referencing the Typeset-11 Error Messages manual.

Done

The command:

©Q/D<CR>

lists at the terminal all items the user requested, in the last hour, that have been completed.

Example

```
PC #493. 10. DP0:[200.216]CONTENTS.SET:1  
(VT2MON) DONE 0
```

```
PC #494. 10. DP0:[200.216]CHANGE.SET:1  
(VT2MON) DONE 0
```

4.6.2.3 Select by Item Number

The command:

©Q/I:X:Y<CR>

lists at the terminal the status of all item numbers, in the range X to Y, that the user requested.

Example

©Q/I:10:16<CR>

lists at the terminal the status of all item numbers, in the range 10 through 16, that the user requested.

If the the second item number is left out only item X will list.

Example

©Q/I:10<CR>

lists at the terminal the status of item number 10.

If the second item number is left out, but the : follows the first item number, from Item X to the end of the file will list.

Example

©Q/I:15:

lists at the terminal the status of all item numbers, 15 or greater, that the user requested.

If the first item number is left out, item numbers 1 to Y are listed.

Example

©Q/I::20

lists at the terminal the status of all item numbers 20, or less, that the user requested.

If both item numbers are left out, the item numbers last input are used.

Example

©Q/I

lists at the terminal the status of all item numbers specified in the last /I that the user requested.

4.6.2.4 Select by Queue Name

The command:

©Q/Q:QUEUENAME<CR>

lists at the terminal the status of the items on the queue named in the command, requested by the user in the last hour.

Example

©Q/Q:LP<CR>

lists at the terminal items that are in the line printer queue as shown below.

Example

```
LP #5. 10. DP0:[200.200]ROY1.PRF:1 (VT3MON)  
DONE 0
```

```
LP #7. 10. DP0:[200.200]ROY2.PRF:1 (VT3MON)  
DONE 0
```

```
LP #8. 10. DP0:[200.200]ROY1.PRF:1 (VT3MON)  
DONE 0
```

4.6.2.5 Select Expanded Listing Format

Time Information

The command:

©Q/ST<CR>

lists at the terminal all items the user requested, in the last hour, with time information.

Example

```
LP #88. 10. DP0:[40.1]LENGTH.FIT;2 (VT0MON)
DONE
3-JUN-74 14:07:46.6 SENT: 14:07:46.6 TOOK:
00:00:35.1
```

Switch Options

The command:

```
©Q/SW<CR>
```

lists at the terminal all items the user requested, in the last hour, with the switch options used.

Example

```
PC #494. 10. DP0:[200.216]CHANGE.SET;1
(VT2MON) DONE 10 /DE
```

```
LP #499. 10. DP0:[200.200]ROY.PRF;1 (VT2MON)
DONE 0 /SP:2
```

```
JAH #500. 10. DP0:[200.200]ROY2.PRF;1
(VT2MON) DONE /JS/NP
```

4.6.2.6 Select All Terminals

The command:

```
©Q/A<CR>
```

lists at the terminal all items queued in the last hour.

Example

```
LP #465. 10. DP0:[200.203]BASEAD.PRF;5
(VT4MON) DONE 0
```

```
CAD#466. 10. DP0:[320.1]TUEJUN04. (VT3MON)
DONE
```

```
RUN#467. 10. DP0:[320.1]. (...OPR) DONE
```

```
CAD#468. 10. DP0:[320.1]TUEJUN04. (VT4MON)
DONE
```

```
CAD#470. 10. DP0:[320.1]TUEJUN04E. (VT1MON)
DONE
```

```
LP #472. 10. DP0:[320.1]LOGCAD.PRF;1
(VT0MON) DONE 0
```

4.6.2.7 Select All Time

The command:

```
©Q/B<CR>
```

lists at the terminal all items requested by the user.

Example

```
JAH #3. 10. DP0:[330.10]VT9999.EDI;1
(VT2MON) ERROR = A36
```

```
JAH #37. 10. DP0:[330.10]STRY98.VTI;1
(VT2MON) DONE
```

```
LP #388. 10. DP0:[330.10]STORY2.PTI;3
(VT2MON)
```

4.6.2.8 Select Last Item

The command:

```
©Q/L<CR>
```

lists the last items specified in the previous queue output command.

Example

```
LP #26. 10. DP0:[210.221]VT20OPB.PRF;2
(VT3MON) DONE 0
```

In this example, Item 26 was the last thing queued from this terminal.

4.6.2.9 Select Line Printer For Listing

The command:

```
©Q/LP
```

performs the equivalent of:

```
©Q/ST/AB
```

except that the listing is done on the line printer.

4.6.2.10 Select Last Listing Format

The command:

```
©Q/F<CR>
```

uses the same switch format as the last queue list command.

4.6.3 Combined Queue Listing Commands

The queue listing commands may be combined to cause several operations to be initiated when only one command string is typed.

Example

```
©Q/QU/E<CR>
```

will list at the terminal all queue names and all items requested by the user, in the last hour, that resulted in an error.

Example

```
©Q/LP/A/B/SW<CR>
```

prints a complete listing of all queue activity for the day at the line printer. This command is normally used to get a complete list of the day's activity at the end of the day.

Example

```
©Q/D/ST<CR>
```

supplies timing information for all items on jobs that were done.

One of the most useful forms of the Queue command and the one used by most operators to determine the status of work done at the system terminal is:

```
©Q/ST/A/B<cr>
```

This command lists at the terminal all items done at all terminals during the day along with the time information.

Example

```
PC0 #1. 255. 0:[2,3]PCSTOP.SET;1 (SYS) DONE  
4-AUG-74 20:12:55.8
```

```
LP #2. 10. DP0:[200,2]OUTSP016.PRF;1  
(VT2MON) DONE 0  
4-AUG-74 21:10:15.0 SENT: 21:10:15.1 TOOK:  
00:00:09.7
```

```
LP #3. 10. DP0:[212,4]OUTSPA.LST;2 (VT2MON)  
DONE 0  
4-AUG-74 21:11:11.3 SENT: 21:11:11.3 TOOK:  
00:01:21.2
```

```
LP #4. 10. DP0:[212,4]OUTSP.LST;2 (...OPR)  
DONE 0
```

```
4-AUG-74 21:18:00.4 SENT: 21:18:00.5 TOOK:  
00:05:44.8
```

4.7 THE ALLOTTER

The Allotter assigns files to the correct photocomp machine when they have been assigned to the PC queue by the Set command. Each file in the system is identified by a filename, extension, version number, and UIC. Appended to this information is a machine number, setup number, and column width (film size). Machine number refers to a particular type of machine; each type is assigned a different number. The setup number refers to a particular machine setup required to process a file (font, typeface, etc.). When a file is assigned to the PC queue for output by the photocomp machine, the Allotter looks at this data, compares it with the current machine status, and sends it the machine that has the correct setup to process this file. This eliminates the need for an operator to check the setup of each machine and to assign each file to a particular machine.

However, if a file must be output to a particular photocomp machine, this can be done using the queue commands (see Paragraph 4.4.5).

4.7.1 Machine Status Update

The system manager may change the setup of photocomp machines as production requirements change.

The form of the command used to change a machine setup is:

```
©CS PCx/SU:y/FS:z/FO or /-FO<CR>
```

where:

PCx specifies the photocomp machine's assigned unit number.

/SU:y specifies that a new setup is to be mounted and y is an octal number specifying the setup.

/FS:z specifies a film size in inches and 1/4 inches as follows:

8: = 8 inches

8:2 = 8 1/2 inches

/FO activates film override and allows output on any available size of film. For example if the stories to typeset require 3.7 inch column width and all the machines in the system contain 8 inch film **/FO** will allow these files to be output on a machine with 8 inch film.

/-FO deactivates film override and allows output only on specified size of film. For example if a story requires 3.75 inch film and none of the machines have this size these files will not be typeset.

All switches are optional and their omission indicates no change in machine setup.

`©CS C1/SU:2/FS:8/FO<CR>`

This example calls for machine setup number 2 on photocomp machine number one. The film size is changed to 8 inches and the film override is activated.

4.7.2 Machine Status

Occasionally the user may wish to check the status of the photocomp machines to determine their setup, film size, etc.

The command:

`©Q/OS/Q:PCx<CR>`

where:

x is the unit number.
(Omission of `/Q:PCx` implies all queues.)

will check the PC queue or queues and list at the terminal a summary of the number of items awaiting output by machine number, the machine setup number and film size.

Example

```

OUTPUT STATUS [ALL] ON 9-JUL-74 AT
16:28:40
M/C TYPE:-          FILM-SIZES:-
  TXT          3.75          8
SETUP ACTV HOLD M/C# ACTV HOLD M/C#
      1                      0
M/C TYPE:-          FILM-SIZES:-
  PAC          4          8.50
SETUP ACTV HOLD M/C# ACTV HOLD M/C#
      1 12    2          0    0    1
      3          2

```

Following is an explanation of the output.

```

M/C TYPE:-          FILM-SIZES:-
  #1    #2          #2
SETUP ACTV HOLD M/C# ACTV HOLD M/C#
  #3 #4  #5  #6  #4  #5  #6

```

- #1: The type of machines is printed here, i.e. TXT, 191, or CRT.
- #2: The film sizes for machines of this type are printed here.
- #3: The machine setup number is printed here.
- #4: The number of items available for processing are listed here.
- #5: The number of items on a queue that is not active are listed here.
- #6: The number of the machine that has the setup on it is listed here.



CHAPTER 5

SYSTEM OPERATION

5.1 MONITOR CONSOLE ROUTINE

This chapter describes the MCR commands used by the operator to communicate with the Typeset-11 system via the MCR console. The MCR (Monitor Console Routine) is the interface for the RSX-11D system. MCR input is initiated by typing <CTRL/C>. The system responds by printing the characters MCR> on the console indicating that it will now accept an MCR command.

5.2 RSX-11D COMMANDS

Command names are three characters in length. The MCR accepts the three characters and then searches for a blank. Therefore, embedded blanks are not allowed in a command name. If a command is entered incorrectly, a message will be printed at the terminal.

NOTE

Only the RSX-11D commands used frequently by the user are listed here. The RSX-11D Operator's Procedures Manual (DEC-11-OXDOA-B-D) contains a complete list of RSX-11D commands.

5.2.1 Mount Command

The MOUNT command causes the device named in the command to become available for storage and retrieval of data.

Format

```
MCR>MOU DEVICE:<CR>
```

Example

```
MCR>MOU DP:<CR>
```

5.2.2 Dismount Command

The Dismount command causes the device named in the command to become unavailable for storage and retrieval of data.

Format

```
MCR>DMO DEVICE:<CR>
```

Example

```
MCR>DMO DP:<CR>
```

5.2.3 Enter Time Command

The enter TIME command is used to enter the correct time into the system.

Format

```
MCR>TIM TIME DATE<CR>
```

where:

Time is entered as HH:MM:SS
Date is entered as MO:DA:YR

Example

```
MCR>TIM 14:55:05 1/18/74<CR>
```

5.2.4 Active Task List Command

The ACTIVE task list command prints statistical information about each active task. DEC programmers or Field Service personnel may ask the user to generate this listing for their evaluation; otherwise, it is unlikely that the user will need this command.

Format

```
MCR>ACT<CR>
```

Example

```
DP.... STS W0 250 000 000 020 003 000 064600
000000 000000
  REGS 174000 000276 002676 000010 000000
000001 002200 150000
000262
VT.... STS W0 250 000 000 020 007 000 264000
000000 000000
  REGS 174000 005742 000414 000017 000000
060160 175640 123264
000414
```

5.2.5 Request Command

The REQuest command allows the operator to request the immediate execution of a task.

Format

```
MCR>REQ TASKNAME<CR>
```

Example

```
MCR>REQ CLASAD<CR>
```

5.2.6 Abort Command

The ABOrt command allows the console operator to terminate the execution of an indicated task.

Format

```
MCR>ABO TASKNAME<CR>
```

Example

```
MCR>ABO JAH<CR>
```

5.2.7 Unload Command

The UNLoad command allows the operator to cause an indicated I/O handler task to release memory.

Format

```
MCR>UNL DEVICE<CR>
```

Example

```
MCR>UNL LP<CR>
```

5.2.8 Load Command

The LOAd command allows the operator to specify that an indicated I/O device handler be made resident in memory and ready for service. I/O requests to a device are not honored unless the requested device handler is resident.

Format

```
MCR>LOA DEVICE<CR>
```

Example

```
MCR>LOA LP<CR>
```

5.3 TYPESET-11 UTILITY COMMANDS

To use the utility commands, the system console must be in OPR mode. To get into OPR mode from MCR mode, the user should type OPR<CR>. The terminal will print out:

```
*READY*
```

The user can now type any of the utility commands listed in the following paragraphs.

NOTE

To exit the OPR mode, at any time, type KIL<CR>.

The format of the elements which comprise the command strings differs for each command. The terms used to describe these elements, however, are consistent and are described as follows:

OUTFILE - The output file specifier in the format:

```
DEV:[UIC]FILE.TYPE;VER
```

INFILE - The input file specifier in the format:

```
DEV:[UIC]FILE.TYPE;VER
```

If more than one file can be specified, they are distinguished as INFILE1, INFILE2, etc.

/SWITCH - The command switch in the format:

```
/SW:VALUE
```

In order to save keystrokes, the user would not normally type in the complete file specifier string, but would take advantage of the system defaults. In particular:

DEV:- The unit on which the system disk is mounted. The device will normally be the default device and this can be omitted.

[UIC]- The user's UIC. If the file is located in the user's area this can be omitted.

FILE- The file name of the specifier before the comma, if any. If the name of the file is the same as the one immediately preceding it, this can be omitted. For example, in the line:

```
©COMMAND FILE.PRF..SET<CR>
```

the file after the comma is FILE.SET.

.TYPE- The file type of the specifier before the comma, if any. If the type of the file is the same as the one immediately preceding it, this can be omitted. For example, in the line:

```
©COMMAND FILE1.PRF.FILE2<CR>
```

the file after the comma is FILE2.PRF

:VER- The default for input files is the most recent version number. The default for output files is the next higher version number, or version one if the file doesn't already exist in the output directory. An exception is the DElete function which requires an explicit version number. The format:

```
:0
```

can be used to specify the newest version.

The format:

```
:-1
```

can be used to specify the oldest version.

Wild cards provide another method of saving keystrokes. In particular:

[UIC]- [*.*] do the command on all areas of the device. This format is only available to the system manager.

[GROUP.*]- do the command on all areas of the device with the given group number. This format is available to the System Manager, controllers, and group editors.

FILE- * do the command on all file names in the directory.

.TYPE- .* do the command on all file types in the directory.

:VER- :* do the command on all file versions in the directory.

The examples listed with the following commands illustrate the use of the above features.

5.3.1 Directory Command

The Directory command provides the user with the facility to list one or more directories. The format for this command is:

```
©D          OUTFILE = INFILE1/LI/FU,  
INFILE2/LI/FU...
```

where:

OUTFILE is the listing file specifier. If omitted, the default is the terminal the user is on.

INFILE is the input file specifier. If omitted, the default is all the files in the user's area.

/LI is the optional List Intermediate switch.

/FU is the optional list FULL switch.

The following shows samples of the directory listing in all of its possible formats:

©D<CR>

DIRECTORY DP0:[4.1]
27-AUG-74 15:51

11SUG5.PRF:1
11SUGA.PRF:2
11SUG5.PRF:2

©D/LI<CR>

DIRECTORY DP0:[4.1]
27-AUG-74 15:52

11SUG5.PRF:1 28. 27-AUG-74 12:37
11SUGA.PRF:2 16. C 21-AUG-74 16:19
11SUG5.PRF:2 26. L 27-AUG-74 14:13

©D/FU<CR>

DIRECTORY DP0:[4.1]
27-AUG-74 15:53

11SUG5.PRF:1 12:37 [4.1]	(5355.556)	28./30.		27-AUG-74
11SUGA.PRF:2 16:19 [1.10]	[RWED.RWED.RWED.R] (10531.1456)	28-AUG-74 14:49(2.)		
11SUG5.PRF:2 14:13 [4.1]	[RWED.RWED.RWED.R] (3665.656)	16./20. C		21-AUG-74
		26./30. L		27-AUG-74
	[RWED.RWED.RWED.R]			

The following gives an explanation of the items appearing in the /LI and /FU listing format.

/LI

FILENAME.TYP;VER UUUU. CL DA-MON-YR
HH:MM

Item	Meaning
FILENAME	File name
TYP	File type
VER	File version
UUUU	Number of blocks used
C	If present, indicates file is contiguous
L	If present, indicates file is locked
DA	Day of month file was created
MON	Month of year file was created
YR	Year file was created
HH	Hour of day file was created
MM	Minute of hour file was created

/FU

FILENAME.TYP;VER (NUMBE,SEQUE) UUUU./AAAA. CL DA-MON-YR
HH:MM
[GRO,USE][SYST,OWNE,GROU,WORL] da-mon-yr hh:mm(REV.)

Item	Meaning
FILENAME	File name
TYP	File type
VER	File version
NUMBE	File number
SEQUE	File sequence number
UUUU	Number of blocks used
AAAA	Number of blocks allocated
C	If present indicates file is contiguous
L	If present indicates file is locked
DA	Day of month file was created
MON	Month of year file was created
YR	Year file was created

Item	Meaning
HH	Hour of day file was created
MM	Minute of hour file was created
GRO	Group number of file's owner
USE	User number of file's owner
SYST	Protection code for system
OWNE	Protection code for owner
GROU	Protection code for group
WORLD	Protection code for world
da	Day of month file was last revised
mon	Month of year file was last revised
yr	Year file was last revised
hh	Hour of day file was last revised
mm	Minute of hour file was last revised
REV	Number of revisions to the file

The protection codes are:

- R- Read access is granted
- W- Write access is granted
- E- Extend access is granted
- D- Delete access is granted

Examples of Directory commands:

1. ©D STORY.*;*<CR>

List on the terminal all files in the user's area with a file name of STORY.

2. ©D*.SET;*<CR>

List on the terminal all files in the user's area with a file extension of .SET.

3. ©D STORY1.PRF.STORY2;*<CR>

List on the terminal the latest version of STORY1.PRF and all versions of STORY2.PRF.

4. ©D[100,120]<CR>

List on the terminal all files in the 100,120 area.

5. ©D ME.DIR = /FU<CR>

Create a file ME.DIR containing a full listing of all files in the user's area. This command is useful when a full listing would overflow the VT20's memory. The directory can then be printed on the line printer with the command

©P ME.DIR<CR>

5.3.2 Proof Extract Command

The proof EXtract command provides the user with the facility to determine the general content of story files by looking at the first few lines of text in each story. After the text displayed fills the VT20 screen ...MORE? is displayed and the user may press <NEXT> to look at more stories or quit by pressing <FINI>. The format for this command is:

©EX INFILE1/FU.INFILE2/FU...

where:

INFILE is the input file specifier. If omitted the default is all the files in the user's area.

/FU is the optional FULL switch.

The following shows samples of the proof extract listing in its two possible formats.

©EX<CR>

```
DIRECTORY DP0:[4.1]
11SUG5.PRF;1      CHAPTER 5 SYSTEM OPERATION    5.1MONITOR CONSO
11SUGA.PRF;2      APPENDIX A      GLOSSARY      TERMDEFINITION
```

©EX/FU<CR>

```
DIRECTORY DP0:[4.1]
11SUG5.PRF;1      CHAPTER 5 SYSTEM OPERATION    5.1MONITOR CONSOLE INTERFACE
OPERATION        This section describe
11SUGA.PRF;2      APPENDIX A      GLOSSARY      TERMDEFINITION
    Algorithm A set of well-defined op
```

Examples of proof EXtract command:

1. ©EX[100.120]<CR>
Extract all story files from the 100.120 area.
2. ©EX*.*<CR>
Extract the latest version of all story files in the user's area.
3. ©EX*.MON<CR>
Extract the latest version of all story files with a .MON extension.
4. ©EX[300.1]*.WIR<CR>
Extract all wire service stories in the 300.1 file pool area.

5.3.3 The Delete Command

The DElete command provides the facility to delete specified files. The format for this command is:

```
©DE INFILE1/PU:n,INFILE2/PU:n,...
```

where:

INFILE is the input file specifier. This must always be input because there is no default.

/PU:n is the optional PURge switch.

/PU:n The PURge switch provides the user with a convenient method of deleting all old versions of files and keeping the n most recent version. If the optional value n is specified then all but the n most recent versions are deleted. If the n value is omitted it is defaulted to 1 and all but the latest version are deleted.

NOTE

Version numbers must be explicitly input for deletes and must be left out for purges. This precaution will protect the user from deleting a file when purge was intended.

Example of Delete command:

1. ©DE STORY.MON;1<CR>
Delete version 1 of the file STORY.MON.
2. ©DE*.SUN;*<CR>
Delete all files in the user's area which have a .SUN extension.
3. ©DE*.*;*<CR>
Delete all files in the user's area.

4. ©DE STORY1.MON;1.;2.STORY2:1<CR>

Delete versions 1 and 2 of file STORY1.MON and version 1 of file STORY2.MON.

5. ©DE STORY.TUE:0<CR>

Delete the newest version of file STORY.TUE.

6. ©DE STORY.TUE:-1<CR>

Delete the oldest version of file STORY.TUE.

7. ©DE STORY.*/PU:2<CR>

Delete all but the two latest versions of all files with a file name of STORY.

8. ©DE STORY1.MON/PU.STORY2:*<CR>

Delete all but the latest version of STORY1.MON and all versions of STORY2.MON

NOTE

The /PU switch does not carry over from one specifier to the next.

5.3.4 The Rename Command

The Rename command provides the user with the facility to change the name of a file. The format for this command is:

```
©R OUTFILE = INFILE1.INFILE2,...
```

where:

OUTFILE is the output file specifier. It has the special property that the file name, type, and version are individually allowed to be explicit, wild card (*), or defaulted (null). A name, type, or version field that is either wild card or null means that the corresponding field of the input file is to be used. Thus, the rename command provides the facility to change one or more fields while preserving the others.

INFILE is the input file specifier. It must be input because there is no default.

NOTE

Renaming files across devices is not allowed.

Examples of Rename command:

1. ©R STORY2.MON:1 = STORY1.MON:5
<CR>

Rename file STORY1.MON:5 to become STORY2.MON:1.

2. ©R BACKUP.*;* = STORY1.*;*.
STORY2.*;* <CR>

Rename all files with the names STORY1 and STORY2 to BACKUP preserving type and version.

3. ©R*.*;1 = *.*<CR>

Rename all of the latest copies of files to version 1.

CAUTION

There must not be other versions of these files!!

4. ©R[200.220] = [200.200]*.*;<CR>

Rename all files out of [200.200] into [200.220] preserving the filename.

5.3.5 The Copy Command

The COpy command allows the user to transfer files from another user's area on the disk to his area, to another disk, or to a different medium (i.e., magtape). The user may also create another copy of a file where the copy is given a different name. The format for this command is:

```
©CO OUTFILE = INFILE1/SU/NV,INFILE2  
/SU/NV,...
```

where:

OUTFILE is the output file specifier. If omitted the default is the input file specifier.

INFILE is the input file specifier. It must not be null.

/SU is the optional SUPersede switch and /NV is the optional New Version switch.

/SU- This switch allows the user to copy a file into an area in which the name, type, and version of the file already exist. The old file is deleted and replaced with the specified input file.

/NV- This switch allows the user to force the output version number of the file being copied to the latest version of the file. If the file doesn't already exist a version of 1 is assigned. The following depicts the results which occur when the /NV switch is specified.

Directories Before COpy

Input Directory	Output Directory
STORY1.MON;1	STORY1.MON;2 STORY1.MON;4

Directory After COpy Without /NV Switch set

Input Directory	Output Directory
STORY1.MON;1	STORY1.MON;2 STORY1.MON;4 STORY1.MON;1

Directory After COpy With /NV Switch set

Input Directory	Output Directory
STORY1.MON;1	STORY1.MON;2 STORY1.MON;4 STORY1.MON;5

NOTE

The version specified in the input file specifier must be explicit or default; no wild cards allowed.

Examples of COpy command:

1. ©CO STORY2.MON = [200.210]STORY1.MON
<CR>

Copy the latest version of the file STORY1.MON in user area [200.200] into the new file STORY2.MON. The version number of the new file will be the same as the latest version of STORY1.MON.

2. ©CO STORY2.MON = STORY1.MON;1/SU
<CR>

Copy the file STORY1.MON;1 into the file STORY2.MON;1. If the file STORY2.MON;1 already exists in the user's area replace the old file with the one copied in. The old file is deleted.

3. ©CO STORY2.MON = STORY1.MON;1/NV
<CR>

Copy the file STORY1.MON;1 into a new file with the name STORY2.MON and cause the version number to be the newest version of that file. If STORY2.MON does not already exist make the version number 1.

4. ©CO = [377.1]*.*<CR>

Copy the latest version of all files in area [377.1] to the user's area preserving file name, type, and version.

5. ©CO STORY1.MON = [377.1]*.*<CR>

Copy the latest version of all files in area [377.1] into the new file STORY1.MON by merging the files together. This is an alternate to the MERge command. Refer to Paragraph 5.3.6 for details.

5.3.6 Append Command

The APPend command allows the user to add to the end of an existing file the concatenation of the input files. The format for this command is:

©AP OUTFILE = INFILE-1.INFILE-2,...

where:

OUTFILE is the output file specifier. It must be the name of an existing file. No wild cards are allowed.

INFILE is the input file specifier. It must not be null.

NOTE

It is recommended that the user not use this command but rather use the MERge command. APPend overwrites an existing file and does not create any backup should anything go wrong. If an error message is produced while appending, the user should edit the output file back to its original form and then re-input the APPend command, correcting the problem that caused the error.

Examples of APPend command:

1. ©AP STORY1.MON = STORY2.MON<CR>

Append the latest version of STORY2.MON to the end of the latest version of STORY1.MON. The following shows the result of this command:

File	Original Contents
STORY1.MON	Now is the time for all good me
STORY2.MON	n to come to the aid of their country.
File	Final Contents
STORY1.MON	Now is the time for all good men to come to the aid of their country.
STORY2.MON	n to come to the aid of their country.

2. ©AP MON.WIR = [377.1]*.WIR

Append to the end of the latest version of the file MON.WIR all files in area [377.1] with the extension .WIR.

5.3.7 The Merge Command

The MERge command creates a new file and copies the list of input files into it, producing a file which is the concatenation of the input files. The format for this command is:

©ME OUTFILE = INFILE1.INFILE2....

where:

OUTFILE is the output file specifier. This must be explicit i.e., no wild cards are allowed.

INFILE is the input file specifier. This must not be null.

MERge is almost identical in its operation to the APPend command. The only difference is that MERge creates a new output file, whereas, APPend adds to an already existing file. MERge, therefore, provides complete backup since all the input files are preserved. If an error is detected during a merge, it is only necessary to delete the newly created output file and start over.

5.3.8 The Protect Command

The PROtect command provides the facility to alter the protection of a file. File protection is provided for four categories as follows:

1. SYstem - Protection against system accounts (all groups less than or equal to 10).
2. OWner - Protection against the owner of the file.
3. GRoup - Protection against other users in the same group.
4. WORld - Protection against all accounts not covered above.

For each category the user can specify whether those accounts may Read, Write, Extend (APpend), or Delete the file. The format of the command is as follows:

```
©PRO INFILE/WO:rwed/GR:rwed/OW:rwed/SY:rwed
```

The switches /SY, /OW, /GR, /WO allow the user to specify which protection is to be altered (others are left intact). The values which follow the switch are any of the 4 letters R, W, E, D (for Read, Write, Extend, Delete) in any order. They specify which privileges that group of accounts may have. If the switch is present and no value is given then no privileges are granted for that group of accounts.

Examples of PROtect command

1. ©PRO STORY.HOT;1/OW:RWE<CR>

Protect STORY.HOT;1 so that the owner of the story cannot inadvertently delete it.

2. ©PRO STORY.HOT;1/OW:D<CR>

Allow the user to delete STORY1.HOT;1. The owner will not be able to read, write, or extend the file after the command is issued

3. ©PRO PERSONNEL.YOU:*/SY/GR/WO

Protect all versions of the file PERSONNEL.YOU from being accessed by anyone but the owner. The System Manager has the power to reprotect this file if needed.

5.3.9 The Unlock Command

The UNlock command allows the user to unlock a locked file. If Class Ad is running when a system crash occurs, the .CAD files will become locked. They must be unlocked before Class Ad can be restarted. Any other locked file should be unlocked and deleted.

The format for the UNlock command is:

```
©UN INFILE1.INFILE2....
```


CHAPTER 6

HOUSEKEEPING OPERATIONS

6.1 HOUSEKEEPING DISK PACKS AND FILES

To simplify housekeeping operations and identification of files, the file extensions may be allocated to identify day-to-day work, department work, multi-paperwork, etc.

Examples

FILE1.MON	Identifies day-to-day work.
FILE1.TUE	
FILE1.SAT	
FILE1.SPT	Identifies department work
FILE2.NEW	
FILE1.WOM	
FILE1.T1	Identifies multi-paper day-to-day work.
FILE2.T3	
FILE1.N2	
FILE2.N4	

Files to be saved can be identified by .SAV; files to be repeated can be identified by .REP. If the user decides to save a file that has been assigned an extension that is to be deleted, he can change the extension using the RENAME command (Paragraph 5.3.4). Copy received in advance of the day it is to be printed may be assigned a .SAV extension or it could be identified by the day or date it is to be printed.

For example:

.SAT (day) or .028 (date) etc.

The following file extensions have been assigned to the system and should not be used to identify files unless they fall into these categories.

.WIR Wire service
.SET Machine code output file
.FMT Format files

The housekeeping operation procedures are divided into three categories - Minor Housekeeping, Daily Housekeeping, and Weekly Housekeeping. Each of these procedures is explained in the following paragraphs.

6.1.1 Minor Housekeeping (Designating Files to be Saved)

This procedure is used to rename files with a new extension so they will be saved when the daily or weekly housekeeping procedures are performed to clean up system files. The RENAME command is used to change the extension of files to be saved for future use or to be used the next day. For example:

```
©R FILE.SAV = FILE.SUN<CR>
```

(new extension) = (old extension)

will change the extension to an extension .SAV that would not be deleted when files with the .SUN extension are deleted from the system during daily or weekly housekeeping operations.

```
©R FILE.MON = FILE.SUN<CR>
```

will change the extension of FILE to .MON so that it will not be deleted until housekeeping is done on Monday.

6.1.2 Daily Housekeeping

Daily housekeeping is done after minor housekeeping has been done to change the extension names of files to be saved. To delete all files that have been used on a given day, in the area that the user is logged in under, the command:

```
©DE*.DAY:*<CR>
```

should be used. For example:

```
©DE*.SUN:*<CR>
```

will delete all files from the user's area that have a .SUN extension.

6.1.3 Weekly Housekeeping

The weekly housekeeping procedure should be done once a week, or daily, if the system handles a large number of files. This procedure is used to renew or refresh the data on the system pack to prevent deterioration of the Typeset-11 program. It is the same effect as installing the master pack or a new system pack since all data is completely rewritten. The master pack mentioned in this procedure should be stored in a vault or safe to prevent its deterioration or damage in a fire, flood, etc.

The weekly housekeeping operation procedure follows:

1. Shut down typeset system as explained in Paragraph 8.5.
2. Mount ROLLIN DECTape on DT0 or mag-tape on MT0.
3. Remove today's pack from DP0 and set it aside.
4. Mount tomorrow's pack on drive 0 with drive on READ/WRITE.
5. Mount master pack, from the vault, on drive 1 with drive on READ ONLY.
6. Set ENABLE/HALT to ENABLE.

NOTE

Systems with a BM792 Bootstrap Loader Program should perform steps 7 and 8 and systems with a MR11-DB Bootstrap Loader should perform steps 9 and 10.

7. Load 173100 into the SWITCH REGISTER and press LOAD ADDRESS (LA).
8. Set SWITCH REGISTER to 177344 for DECTape and press START. (Go to step 11.)
9. Set the SWITCH REGISTER to 173120 for DECTape or 173136 for magtape and press LOAD ADDRESS (LA).
10. Press START.
11. Wait for:

```
ROLLIN VXX
```

```
#
```

to be typed out at the terminal (XX is the version number of the ROLLIN tape on your site).

12. Type:

```
DP0:<DP1:/VE<CR>
```

When # is typed out again, remove the master pack from drive 1 and return it to the vault.

13. Mount today's pack on drive 1 and leave control set to READ ONLY.
14. Restart typeset system following the procedure in Paragraph 8.3.

NOTE

The next 2 steps will copy all files that were saved during daily house-keeping procedure from DP1 to DP0.

15. To copy all .SAV files from DP1 to DP0 type:

```
MCR>REQ ...PIP/UIC = [X.Y]<ALT>
```

where:

[X.Y] is the user area to be copied.

The terminal will respond with:

```
PIP>
```


Now type:

PIP>DP0: = DP1:*.SAV.:* <CR>

NOTE

This procedure must be performed for all user areas containing .SAV files to be copied over.

To return to MCR mode type:

<CTRL/Z>

then

<CTRL/C>.

16. Remove DECTape or magtape and return to storage.
17. Remove today's pack and return to storage.

6.2 BACKUP DISK PACKS

Once the Typeset-11 System has been installed, extreme care should be taken to maintain backup RP03 disk packs. The RSX-11D and Typeset-11 Programs are installed on the RP03 disk at the time of installation. Each system should have four RP03 packs containing the system programs as follows:

1. A fire storage pack, stored in a bank vault, so it can never be destroyed at the installation.
2. A master backup pack should be stored in a safe place at the installation to be used to refresh the system pack during the weekly housekeeping operation.
3. The system pack that is installed on the system disk for system operation plus a backup in the computer room. If this procedure is followed, the user will always have a disk pack available for system operation. If it is ever necessary to remove the fire storage pack for system operation, it should be copied using the weekly housekeeping procedure and returned to fire storage as soon as possible.

NOTE

One clean pack per drive should be kept for maintenance purposes.

6.3 EXCEPTION WORD DICTIONARY UPDATE PROGRAM

When it becomes necessary for the J&H program to hyphenate a word, the exception word dictionary file (JHDICT.SYS) and a set of probability tables are accessed simultaneously. If the word in question is listed in the exception word dictionary, it is hyphenated accordingly, otherwise, it is hyphenated according to the probability tables (i.e., algorithmically). The JHDICT.SYS file resides on the system disk in UIC [2,3] and contains a current list of properly hyphenated words. The probability tables are core resident and are used to compute the most probable location of a hyphen in any word.

If a word is typeset with improper hyphenation, it was either entered in the exception word dictionary incorrectly, or it is not in the dictionary. The exception word dictionary update program (DIC) is used either to correct improper hyphenation or to enter new words in the exception word dictionary.

6.3.1 DIC Input

The input to the DIC program is a proof format file typically named update which contains one word per line with all legal hyphens inserted. The input file is created at the VT20 by typing:

©Filename<CR>

This command string creates the input update file into which the desired words may be entered. Following is an example of typical words as they might appear in the input file.

di-a-tom<CR>
cym-bid-i-um<CR>

NOTE

Each one-word line must be terminated with a <CR>.

6.3.2 Correcting and/or Deleting Words

If a word is incorrectly hyphenated in the dictionary (e.g., dia-tom), it is corrected by entering the word correctly hyphenated in the update file and running the DIC program. When the program is run, the incorrectly hyphenated form of the word is deleted and replaced by the correctly hyphenated form.

Words are deleted from the exception word dictionary by marking them with the () symbol in the update file as follows:

diatom

The deletion occurs when the DIC program is run.

6.3.3 Installing and Running DIC

The DIC program is normally run at the beginning of the day prior to doing a batch start-up (BAT STARTUP). Running the program merges the input file with the current exception word dictionary creating a new version of the JHDICT.SYS file. The input file does not have to be in alphabetical order.

To run DIC at the system console, type:

```
MCR>INS [2,10]DIC
```

This installs the DIC program in the system. Now type:

```
MCR>DIC<CR>  
DIC>[UIC]FILENAME<CR>
```

where:

UIC is the input file UIC.
FILENAME is the input file name (typically UPDATE)

Assuming that there are no errors, these two command strings cause the new JHDICT.SYS file to be generated in UIC [2,3]. When the file is complete, the system responds with:

```
DIC>
```

If there is an error, the new JHDICT.SYS file is not created and an error message is generated. The error messages are listed at the end of this document.

A second method of activating the DIC program is used if it is desirable to run DIC after the Typeset-11 system is started up. However, there may not be

enough core to run both the system programs and DIC simultaneously. If you type:

```
MCR>DIC<CR>
```

and the system response is:

```
MEMORY NOT AVAILABLE
```

then, type:

```
MCR>REQ#...DIC(ALT)
```

to run the DIC program. This forces the J&H program out of core (i.e., checkpoints J&H) and runs DIC.

NOTE

Running DIC after system startup does not incorporate the resulting updated exception word dictionary into the system until the next time BAT STARTUP is run (normally the beginning of the next day).

After running the DIC program, the new dictionary ([2,3]JHDICT.SYS) must be copied to the production master pack, so that it will be incorporated into subsequent daily production packs.

6.3.4 Optional DIC Switches

The switches listed in Table 6-1 are available for manipulating file flow when the DIC program is run.

The proof output file generated when either /LO or /HY is specified is named JHDICT.PRF and is stored in UIC [1,10]. This file can be printed on the line printer after typeset is started from either a VT20 or the MCR console using OPR by typing, P [1,10]JHDICT.PRF.

Once DIC is installed, a listing of the current exception word dictionary can be obtained by using the /LO switch without specifying a filename, for example:

```
MCR>OPR P [1,10]JHDICT.PRF
```

**Table 6-1
DIC Switches**

Switch	Form	Definition
Create	/CR	Creates a new dictionary from the input proof file and ignores the old dictionary. THIS OPTION IS FOR USE BY DIGITAL EQUIPMENT CORP ONLY.
Log	/LO	Creates a new dictionary by updating the current dictionary with the input proof file and generates a proof output file (JHDICT.PRF), which contains a list of all of the words in the new (updated) dictionary. Can also be used to obtain a listing of the current dictionary without first doing an update (see below).
Hyphenation	/HY	Compares the hyphenation given in the specified input file to the J&H hyphenation algorithm for each of the words in the input file, and generates a proof output file, JHDICT.PRF (Figure 6-1) that can be listed as explained below. This switch overrides the /LO and /CR switches; no new dictionary is created when this option is used.

6.3.5 Exiting and Removing DIC

To exit from the DIC program, type:

CTRL Z

The system responds with:

MCR>

To remove DIC, type:

MCR>REM...DIC<CR>

```

AARD-VARK          (100%)
A.BAN-DON          (OK)
A.BAN-DONED        (OK)
A.BAN-DON-MENT     (OK)
A.BI.L-I-TIES      (BAD HYPHENS)
A.BI.L-I-TY        (BAD HYPHENS)
A.B-O-LI-TION      (MISSED HYPHENS)
A.BRUPT--LY        (OK)
AB-SO-LUTE-LY      (100%)
A.BUN-DANCE        (OK)
A.BUN-DANT         (OK)
A.C-A-DEM-IC       (MISSED HYPHENS)
A.CA.D-E-MY        (BAD HYPHENS)
AC-CEL-ER-AT-ED    (MISSED HYPHENS)
AC-CEL-ER-OM-E-TER (MISSED HYPHENS)

```

6.3.6 Hyphenation Symbology

Figure 6-1 is part of a line printer listing showing an example of the output file that is generated when the /HY switch is used. The file contains properly and improperly hyphenated words. Table 6-2 lists and defines the hyphenation symbols used to compare the hyphenation produced by the system to that specified in the dictionary.

Figure 6-1 A Partial LP Listing of a /HY
Generated JHDICT.PRF File

Table 6-2
Hyphenation Symbols and Corresponding Messages

Symbol	Message	Definition
.	(BAD HYPHENS)	The hyphen was computed by J&H but was not indicated in the input file.
—	(MISSED HYPHENS)	The hyphen is specified in the input file but was not computed by J&H.
Either . or —	(OK)	A hyphenation error follows the first letter or precedes the last letter of a word. Since such a point would not be considered for hyphenation, the error is not considered to be significant.
-	(100%)	The hyphenation specified in the input file is the same as that computed by J&H.

6.4 FORMAT MANAGEMENT

The Typeset-11 System Manager will have to edit existing formats from time to time and create new formats as production requirements change (refer to Typeset-11 Markup Manual, DEC-11-HMUPA-A-D).

6.4.1 Creating Formats

Formats may be created either by processing format definition commands through the justification and hyphenation program, or by creating format files and transferring them to the format storage area.

6.4.1.1 Using J&H to Create Formats

Refer to the J&H Markup Manual for information on the format definition commands. To define a series of formats using the J & H program, create a file for input to the J&H program which contains only the format definitions. This file may be created either by perforating a paper tape and submitting the tape to the paper tape reader, or by creating a file through the VT20 editor. When the file is created, submit it to the J&H program (for a file created by the input spooler, the spooler may automatically queue input files to J&H), and the processing of the file causes the formats to be created, in UIC [2,1].

6.4.2 System (Protected) Formats

Some formats are designed to be used frequently in many stories. These system formats must be protected against inadvertent or malicious alteration or deletion, which can be done by using PIP to set a file protection, prohibiting any access to the format file except reading the file.

6.4.2.1 Protecting an Existing Format

All formats are stored in one area, under UIC [2,1]. Once a system format has been created, the file containing the format may be protected by running PIP on the MCR terminal under a system manager's UIC. To protect a format, type the following commands:

```
MCR>REQ ...PIP/UIC = [2,1]<ALT>
PIP>NAME1.FMT;1/PR:-10422 <CR>
PIP>NAME2.FMT;1/PR:-10422 <CR>
```

Continue typing to protect each format. If the only formats stored in the area are system formats, a wild card form of the command may be used to protect all the formats:

```
PIP>[2,1]*.FMT;1/PR:-10422 <CR>
```

When a format has been protected in this manner, it cannot be deleted or altered; any attempts to redefine the format using the format definition commands in J&H cause an error message to be generated and the file is unchanged.

NOTE

An attempt to alter a protected format produces the error message:

<?? PROTECTED FORMAT>

6.4.2.2 Unprotecting a Format

When it is necessary to edit or delete a system format, the protected file must first be unprotected. This is done in much the same manner as protecting the format, except that the value provided to the protection switch in the PIP command is 0. For example, unprotecting a system format named PAGENO is done by the following commands:

```
MCR>REQ ...PIP/UIC = [2.1]<ALT>
PIP>PAGENO.FMT;1/PR:0 <CR>
```

6.4.3 Altering a Format

A format may be altered by redefining it using the J&H program, or by editing the format file and replacing the file in the format storage area. To alter a system format, the format must be unprotected as described in Paragraph 6.4.2.2.

6.4.3.1 Altering a Temporary Format using J&H

To alter or replace a format using the J&H program, simply create a file containing the format definition, and process the file through the J & H program as described in Paragraph 6.4.1. The new definition replaces the old definition, if the existing format is not protected.

6.4.4 Deleting Formats

To delete a format, the format must first be unprotected and then deleted as follows:

```
MCR>REQ ...PIP/UIC = [2.1]<ALT>
PIP>NAME.FMT;1/PR:0 <CR>
PIP>NAME.FMT;1/DE <CR>
```

To return to MCR mode type:

<CTRL/Z>

then

<CTRL/C>.

6.4.5 Managing Temporary Formats

Temporary formats should be allocated file names that allow easy identification for easy deletion. The system manager should allocate format names so only a few names are used each day. In this manner, they can be located, edited, or deleted easily.

CHAPTER 7

ERROR MESSAGES

7.1 GENERAL

There are two basic types of error messages: RSX-11D error messages and Typeset-11 error messages. All error messages are coded and the code is issued when an error occurs. The error codes are listed in the Typeset-11 Error Messages Manual (DEC-11-HSYEA-A-D). When an error code is issued, refer to this manual to determine which error has occurred and the appropriate corrective action to be taken.

CHAPTER 8

STARTUP AND SHUTDOWN OPERATION

8.1 INTRODUCTION

There are several programs included in the Typeset-11 System software:

Example

1. RSX-11D Operating System
2. Typeset-11 Programs (Queue Manager, Applications Monitor, J AND H, CLASS-AD, and Spoolers)
3. VT20 Program
4. VT20 Load Program (VTLOAD)

The RSX-11D and the typeset programs must be loaded into the PDP-11/45 system to allow the system to operate. The VT20 program must be loaded into the PDP-11/05 processor to allow operation of the Video Display Terminals (VDT's). The VT20 program is transferred from the PDP-11/45 processor to the PDP-11/05 processor by VTLOAD, and loaded into the PDP-11/05 by the Absolute Loader. The Loader is, in turn, transferred from the PDP-11/45 by VTLOAD and loaded into the PDP-11/05.

Normally the Typeset Programs and the VT20 programs are stored in the system and need only be started to run them. It is good practice however, to initialize the system daily to ensure that the system is running properly.

8.2 TYPESET-11 SYSTEM INITIALIZATION

System initialization ensures that the switches on the 11/45 and 11/05 computer console and terminal are set to the correct positions for system operation. The initialization procedure is:

1. Turn computer POWER key ON.
2. Set the ENABLE/HALT switch to HALT.

NOTE

Perform step 3 on systems with a Teletype, and step 4 on systems with a DECwriter.

3. Turn Teletype control switch to LINE. Teletype motor should be running.
4. Set CB1 and CB2 at rear of LA30 to ON and verify that the READY indicator is on. Set the mode switch to ON-LINE and BAUD RATE to the correct baud rate for your system.

NOTE

For normal operation, the AC power cable must be connected to the Teletype or DECwriter correctly and the AC power and data cables must be connected to the tape punches. If either of these cables has been accidentally disconnected, the associated peripheral device will not function.

5. Set control switch on each tape punch to AVAILABLE. Ensure that the punches contain sufficient tape.
6. Ensure power is applied to the disk drives.
7. Ensure that the Line Printer POWER, READY, and ON-LINE lamps are lit.
8. Ensure that power is applied to the photo-comp machine.

8.3 STARTING THE TYPESET-11 SYSTEM

NOTE

When starting the system at the beginning of the day, or after the system has been shutdown, the start procedure should be used. If the system crashes, and must be restarted during the day, use the restart procedure in Paragraph 8.4.

After the system initialization procedure has been performed, the system may be started as follows:

NOTE

If at any point during the startup procedure you cannot continue the startup procedure return to step 1 and start the procedure over.

1. Ensure ENABLE/HALT set to HALT then set ENABLE/ HALT to ENABLE.

NOTE

Perform steps 2 and 3 on systems with a BM792 Bootstrap Loader and step4 on systems with an MR11 Bootstrap Loader.

2. Load SWITCH REGISTER with 173100 and press LOAD ADDRESS (LA).
3. Load SWITCH REGISTER with 176716, then press START. (Continue with step 5.)

4. Load SWITCH REGISTER with 773154, press LOAD ADDRESS, then press START.

After START is pressed the RSX-11D program will be bootstrapped from the system disk into core memory.

5. Follow instructions below:

NOTE

Entries that the operator must type are underlined. The information typed out as a result of these commands may vary from system to system, but the information typed in is the same for all systems.

When the program is in core memory the terminal will type out the following message:

```
TYPESET-11 RSX-004A
```

This message is the version number assigned to your RSX-11D operating system.

```
SAV--CORE SIZE:80<CR>
```

The user must type in the size of core memory for his system. 80 is used in the example just shown.

The user must type in the time of day and the date as shown in the following example:

```
MCR>TIM 9:30:00 2/25/74<CR>
```

```
MCR>MOU DP0:<CR>
```

```
MOUNT-**VOLUME INFORMATION**
```

```
DEVICE = DP0
CLASS = FILE11
LABEL =
UIC = [1.1]
ACCESS = [RWED.RWED.RWED.
RWED]
CHARAC = []
```

After the next command is typed, the programs will be started and the queues will be activated. The user can observe the system terminal and observe when each operation is completed. The typeout here is a typical example of the typeout seen but not necessarily the typeout you will see on your system:

```
MCR>BAT STARTUP<ALT>

: STARTUP.JOB
:
: STARTUP TYPESET
:
: LOAD I/O DRIVERS
UNL LP
UNL MO
LOA VT
LOA PR
LOA PP
LOA PC
LOA LX
:
: NOW SET UP DF:
:
INI DF:
MOU DF:
MOUNT-**VOLUME INFORMATION**
    DEVICE = DF0
    CLASS = FILE 11
    LABEL =
    UIC = [10.1]
    ACCESS = [RWED.RWED.RWED.
              RWED]
    CHARAC = []
UFD DF:[1.1]
PIP ©[1.1]JAHSYS
:
: FUDGE REQUEST
:
INS [11.1]REQ/TASK = ...STA/PAR = MCR
:
: START QUEUE MANAGER
:
PIP [2.4]*.QUE;*/DE
STA QM
:
```

```
: START UP SPOOLERS
:
STA PROSP/UIC = [1.1]
STA PRISP/UIC = [1.1]
STA PPOSP
STA PPISP
STA PCOSP
REM PRT
STA LPOSP
:
: START UP JAH
:
STA JAH/UIC = [1.1]
:
: START UP LOGIN PROGRAMS
:
STA VT0LOG
STA VT1LOG
STA VT2LOG
STA VT3LOG
:
: ACTIVATE THE QUEUES
:
:OPR ©STARTUP
:
: PUT IN NEW TKTN
:
REM .TKTN
INS [12.1]TYTKTN
INS [12.1]TKTN1
:
: UNFIX BPR...
:
INS [11.1]UNF/TASK = ...UNX
UNX BPR...
REM ...UNX
*****END OF BATCH
```

Now type:

<CTRL/C>

The terminal will respond with:

MCR>

There may be some items of equipment that the user does not use every day or at certain times of the day or the batch startup operation may not activate all the queues that are needed. The user should type the command:

```
MCR>OPR Q/QU<CR>
```

and there will be listed at the terminal a list of all queues and their status, active or inactive. From this list the user can select the queues he would like to activate or deactivate for the day's operation. If the user wishes to activate or deactivate for the day's operation, or if the user wishes to activate a queue that is not active type:

```
MCR>OPR<CR>
```

The terminal will respond with:

```
*READY*
```

5. To activate a queue, type:

```
Q Queue name/AC<CR>
```

Example

```
Q PC3/AC<CR>
```

This example will activate the queue for photocomp number 3. Any queue on the system may be activated in a similar way.

6. To deactivate a queue, type:

```
Q Queue name/-AC<CR>
```

Example

```
Q PC3/-AC<CR>
```

This example will deactivate the queue for photocomp number 3. After the necessary queues have been activated or deactivated type:

```
<CTRL/C>
```

The terminal will respond with:

```
MCR>
```

At this time, the Typeset system is started and the user can commence his daily operations.

8.4 RESTARTING THE TYPESET-11 SYSTEM

If the Typeset system crashes after it has been started using the procedure in Paragraph 8.3, and there are files assigned to queues for processing, the system should be restarted using this procedure. Otherwise, all files assigned to queues and waiting to be processed will have to be reassigned to the appropriate queues using the Queue commands. This procedure allows the system to pick up at the point where it crashed, and continue processing files. Any file that was being processed when the system stopped will be reprocessed in its entirety. Any files that were being edited will be locked. The current version of each file must be unlocked and deleted (except for .CAD files [Paragraph 5.3.9]) before the file can be re-edited.

NOTE

This procedure cannot be used if the system was shutdown according to the procedure in Paragraph 8.5.

Restart the system as follows:

1. Set ENABLE/HALT to ENABLE

NOTE

Perform steps 2 and 3 on systems with a BM792 Bootstrap Loader and step 4 on systems with a MR11 Bootstrap Loader.

2. Load SWITCH REGISTER with 173100 and press LOAD ADDRESS (LA).
3. Load SWITCH REGISTER with 176716 and press LOAD ADDRESS. Then press START. (Continue with step 5).
4. Load SWITCH REGISTER with 173154 and press LOAD ADDRESS, then press START.

All entries required by the operator are the same as the startup procedure except the BAT command is RESTART instead of START.

NOTE

Entries required by the operator are underlined.

```
TYPESET = 11 RSX-004A
SAV--CORE SIZE:80<CR>
MCR>TIM 9:30:00 2/25/74<CR>
MCR>MOU DP0:<CR>
MCR>BAT RESTART<ALT>
```

After this step is performed, the typeout of information at the terminal is almost the same as the startup procedure (Paragraphs 8.3). Refer to this paragraph if an explanation is required.

8.5 SHUTTING DOWN THE TYPESET-11 SYSTEM

CAUTION

All users should be logged off the system before shutdown is started; otherwise files that are being edited will be locked.

Shut down the typeset system as follows:

NOTE

Responses required by the operators are underlined.

1. Type:

```
<CTRL/C>
```

If the terminal is in OPR mode, the user must type KIL<CR> to return to MCR.

2. The terminal will respond with:

```
MCR>
```

Now type:

```
MCR>SET/UIC = [1,10] <CR>
MCR>OPR<CR>
```

The terminal will respond with:

```
*READY*
```

Now type:

```
CAD CLOSE<CR>
```

The system will take a few minutes to close down the CLASS AD system, so the operator will have to wait a few minutes for the terminal to print:

```
*READY*
```

Now type:

```
<CTRL/Z>
```

The terminal will respond with:

```
MCR>
```

Now type:

```
MCR>DMO CA0:<CR>
MCR>DMO DP1:<CR>
```

If this step fails, try again; it may take few seconds to shut down CLASS AD.

3. Now type:

```
MCR>OPR Q/EX<CR>
```

The terminal will close out all queues and stop the QUEUE MANAGER. The terminal will respond with:

```
MCR>
```

4. Type:

```
MCR>ABO JAH<CR>
```

5. Type:

```
MCR>DMO DF:<CR>
```

6. Type:

MCR>DMO DP0:<CR>

7. Set ENABLE/HALT to HALT.

8.6 NORMAL VT20 RESTART

At the PDP-11/05 proceed as follows to start the VT20 program:

1. Set ENABLE/HALT to HALT
2. Set 0400 in at the SWITCH REGISTER.
3. Press ENABLE/HALT to ENABLE
4. Press LOAD/ADDRESS (LA) and then press START.

After the VT20 is restarted the cursor at the terminal will be displayed in the upper left hand corner. The LOG IN message will not be displayed. The user should hit <CMND> to put the terminal in the CMND mode. The user can now log in. To log in type:

©x,y<CR>

where:

x,y is the user's group-and-user number.

The Terminal will respond with:

PASSWORD: ©.....

and the user should type in the correct password. When the password is typed correctly, the terminal will respond with:

READY

and the user can continue his operation.

8.7 RELOADING VT20 AT THE PDP-11/45 (MCR CONSOLE)

To load the VT20 from the PDP-11/45 MCR Console, proceed as follows:

1. At the PDP-11/05 associated with the VT20:
 - a. Set ENABLE/HALT to HALT.
 - b. Set 37744 in at the SWITCH REGISTER.
 - c. Press ENABLE/HALT.
 - d. Press LOAD/ADDRESS (LA) and then press START.

2. At LA30 type:

MCR>VTL<CR>

The terminal will respond with:

VTL>

Now type:

VTL>VTx:<CR>

Where:

x = 0.2.4.6 for the VT20 unit number.

When the program has been loaded, the LA30 will respond with:

VTL>

Type:

<CTRL/Z><CTRL/C>

To return to the MCR mode.

At this time

PLEASE LOGIN

will be displayed the terminal and the user can log in as usual.

NOTE

If the VT20 cannot be restarted using the load procedure the Bootstrap Loader must be loaded as explained in the following paragraphs.

8.8 BOOTSTRAP LOADER LOADING PROCEDURE

The procedure for loading the Bootstrap Loader is:

1. Depress HALT.
2. Set SWITCH REGISTER to 37744.
3. Depress LOAD ADDRESS.
4. Set SWITCH REGISTER to 016701 (the contents of location 37744 of the Bootstrap Loader).
5. Depress DEPOSIT.
6. Set SWITCH REGISTER to the contents of the next memory location in the Bootstrap Loader (Table 8-1) and depress DEPOSIT. The address is incremented automatically each time DEPOSIT is depressed.
7. Repeat step 6 for all memory locations in the Bootstrap Loader.

After the Bootstrap Loader is loaded into memory it may be checked as follows:

1. Set the SWITCH REGISTER to 37744 (address of first word in the Bootstrap Loader).
2. Press LOAD ADDRESS.
3. Depress EXAMINE and observe the contents of the memory location on the ADDRESS/DATA lights. It should be 016701 for location 37744.
4. To observe the next location, depress EXAMINE again.
5. Continue to depress EXAMINE until all memory locations in the Bootstrap Loader have been checked.

After the Bootstrap Loader is reloaded, repeat the loading procedure in Paragraph 8.7.

**Table 8-1
Bootstrap Loader**

Location	Contents	Location	Contents
37744	016701	37762	116162
37746	000026	37764	000002
37750	012702	37766	037400
37752	000352	37770	005267
37754	005211	37772	177756
37756	105711	37774	000765
37760	100376	37776	175610

8.9 LOADING VT20 DIAGNOSTICS

The following VT20 Diagnostic programs listed in Table 8.2 are supplied with the Typeset-11 system.

**Table 8-2
VT20 Diagnostics**

Title	MainDEC Number	Filename
VT20 Diagnostic	11-DBVTA-PB	V720E.DIA
DL11 Off Line Test	11-DZDLA-PB	DL11E.DIA
11 Family Instruction Exerciser	11-DZQKC-PB	PDP11.DIA
Worst Case Noise Test	11-DZMMG-PB	NOISE.DIA
Random Data Test	11-DZMMI-PB	RANDAT.DIA

These diagnostic programs are stored in user area 2,12 and must be transmitted to the VT20 to be tested using the VTLOAD Program. The diagnostic

are linked to the Absolute Loader so only a one pass load is required to transfer these programs. To transfer a VT20 Diagnostic Program from the PDP-11/45 to the PDP-11/05 of the VT20 to be tested, proceed as follows:

1. Perform step 1 of the procedure to reload the VT20 from the PDP-11/45 MCR console (Paragraph 8.7).
2. Ensure that the LA30 is in the MCR mode: if not, type:

<CTRL/C>

The message:

MCR>

will be printed at the terminal. Now type:

MCR>VTL<CR>

and the terminal will respond with:

VTL>

Now type:

VTL>VTx:/NR = [2.12]FILE.DIA <CR>

where:

x is a number 0, 2, 4, or, 6 for the VT20 unit number.

/NR is a switch to suppress the rebooting of VTLOG.

FILENAME is one of the diagnostics named in Table 8-2.

CHAPTER 9

RECOVERY PROCEDURES

9.1 SOFTWARE RECOVERY PROCEDURES

9.1.1 Recovery from System Crashes

If the Typeset system crashes it normally prints the message:

```
CRASH -- CONT. WITH SCRATCH ON DEC-
TAPE UNIT 7
```

If the system is equipped with a DECTape drive:

1. Mount a scratch DECTape on the drive.
2. Set WRITE ENABLE, unit 7, and REMOTE switches.
3. Press CONTINUE on the console.
4. Send tape to DEC for analysis.

The DECTape drive should become active. After the drive stops moving or if the system does not support DECTape, refer to Paragraph 8.4 to restart the system.

9.1.2 Recovery from System Hangs

If the MCR console does not respond to <CTRL/C> and production through the system seems to have come to a standstill, the system is probably hung. Depress HALT and then refer to Paragraph 8.4 to restart the system.

9.1.3 Recovery from VT20 Hangs

Refer to Paragraphs 8.6 through 8.8 for a description of VT20 restart procedures.

9.1.4 Task Aborts

If a task aborts, a message prints out on the MCR console. Since the task is automatically requested, the System Manager is not required to do anything when this message occurs. Refer to Paragraph 4.6.1.1 for more details.

9.1.5 Manual Task Aborts

It may become necessary to manually stop a task, either because it appears to be hung, or to correct an operational error. To accomplish this, type:

```
MCR>ABO taskname
MCR>REQ taskname
```

NOTE

For VT20 monitor tasks, VTxMON should be aborted, but VTxLOG is requested when you are ready to restart the task (x = the unit number).

When a spooler task is manually aborted and restarted, processing automatically begins with the next task.

To force a spooler task to discontinue processing the current file and go on to the next, use the OPR command Q/SP to find the number of the item being processed, and the /KI command to kill that item. Processing automatically restarts on the next task.

9.1.6 Running Verify

If an installation consistently gets DISK FULL errors, the System Manager should keep track of the number of free blocks on the system disk and delete files when this number goes under 500. This is accomplished by typing <CTRL/C> on the MCR console. When the system responds with MCR> type:

```
MCR>REQ VERIFY<ALT>
VER>SY:/FR<CR>
```

Verify will then list the number of free blocks. To return to MCR mode type:

```
<CTRL/Z> <CTRL/C>
```

9.1.7 Reporting Software Errors

Software Performance Reports forms (S.P.R.) may be obtained from the Field Service Applications Engineer, or from any DEC office. When completed, these reports should contain any and all useful information pertaining to the software problem. Examples of output and listings should be attached to give a better description of the problem. The report should then be sent to your Regional Typeset Specialist.

9.2 HARDWARE RECOVERY PROCEDURES

9.2.1 Introduction

There are many symptoms that may appear due to hardware failures. Some of the symptoms are too complex to be easily isolated; this section describes some of the basic problem areas and the possible recovery procedure.

9.2.2 Line Printer

The Line Printer recovery procedures are as follows:

1. Ensure that power is on and power cable is connected.
2. Ensure ON LINE/OFF LINE is set to ON LINE.
3. Ensure that an adequate supply of paper is installed correctly (see Paragraph 10.2)

9.2.3 LA30

The LA30 recovery procedures are as follows:

1. If the keys are inactive (no response when a key is depressed), type:

<CTRL/C>

and the terminal should respond with:

MCR>

at this time, you should be able to type commands. If not perform the following steps:

2. Set CB1 and CB2 at rear of LA30 to ON and verify that READY indicator is lit.

3. Set MODE switch to ON LINE and BAUD RATE to correct rate for your system.

4. Ensure that the power cable is connected.

9.2.4 Input/Output Errors

9.2.4.1 Input-Readers

Acceptance of an input take by the system (i.e., a 'good' filename) is indicated by a short pause in reading after the first few inches of the take. If a bad filename is read, no pause will occur and the tape will pass straight through the reader, the data being ignored by the system. If this occurs, remove the tape and check for a mispunched filename, dirt or chad obscuring the data holes or bad registration of the feed holes (see Paragraph 11.2). If anything wrong is found, correct it and read the tape in again. Ensure that the tape guides are properly adjusted for six-level tapes and the switch behind the reader is in the six-level position. If nothing wrong is found or the tape is rejected again, process the tape through another reader. If this is now accepted and continual trouble is experienced with the first reader, take it out of service and notify your local Field Service Office. If problems are encountered with all readers, and cannot be isolated to bad registration, out-of-spec tape etc., notify your local Field Service Office.

9.2.4.2 Input-VT20s

If text and/or commands entered via the ASCII keyboard are displayed as garbage on the screen, at a convenient time, reload the VT20 (Paragraph 8.5) to see if this will clear up the problem. If reloading does not solve the problem, discontinue using the terminal(s) and notify your local Field Service Office. If all terminals are giving problems, a restart of the system may first be attempted before notifying your local office.

If text brought to the screen while editing is garbage, at a convenient time, reload the VT20 (Paragraph 8.5). If this does not solve the problem, discontinue using the terminal(s) and inform your local Field Service Office. If all terminals are affected, replace the system disk and/or restart the system.

9.2.4.3 Output-Paper Tape

If bad output from the photocomposition machines is found, determine first if the problem can be isolated

to one photocomp machine and/or one paper-tape punch. If the former, reload the program in the photocomp machine (where applicable) and try again. If bad output is due to one punch only, discontinue using the punch and notify your local Field Service Office. The isolation is performed by taking two or three paper tapes from each punch and running them on all photocomps. An alternative isolation method is to punch one file out twice on each punch; then hold the tapes together and compare for missing or extra data holes. Isolate the bad punch if found and remove from service.

9.2.4.4 Output-On-Line Interface

Determine which photocomp machine is giving the problem. Determine whether it is the photocomp machine or LPD11/LPC01 by interchanging the LPC01 to photocomp machine cable between two machines. If the LPD11/LPC01 is found to be a fault, remove from service and notify your local Field Service Office.

9.3 BACKUP SYSTEMS

For maximum protection against extended periods of downtime or system failure at critical times, two similarly configured systems are recommended. The prime system to be used for production, while the second system may be used for other functions, such as Business Data Processing, or a dedicated editorial system.

9.3.1 Hardware Backup Units

Table 9-1 shows the hardware components, backup device used, and procedures in the event of a hardware failure.

9.3.2 Data Backup

The system and disk pack file structures are designed to reduce the possibility of losing stories entered into the system. Crashes and system failures which cause the loss of stories in the system will be very rare. If they occur, work still in the system will have to be re-entered either manually, or by use of the optional Fail-Safe magtape feature.

**Table 9-1
Hardware Backup Devices And Procedures**

Failure Occurs on	Back-up Device	Procedures and Comments
11/45 core memory, RF11, RS11, RP11-C, LA30, PA611-C, RP03 system	Second System	Move both RP03 diskpacks to the second system. Switch VT20s and photocomps to the second system. Restart system.
VT20 (or DL11s), readers, punches, photocomp interfaces	Additional devices	Normally these devices will be backed up by having multiple devices available.
LP11		Either transfer to the second system or eliminate hard copy.
Class Ad RP03		Either transfer to the second system or only process text and ClassAd input. Wait until unit is running and then insert ads.
TU10/TU11 Magtape		Not essential to operation.

Formats, Exception Word Dictionary, and advance material are backed up if the standard operating procedures are followed. This is accomplished by copying the system pack onto a reserve disk. In addition, copying the updated CLASS AD disk provides backup for this data base.

Generation of next day's classified section is accomplished by reading ads into the storage and edit disk and after editing, transferring the ads into the classified disk. Transferring the ads into the classified disk does not kill the files on the system disk. Therefore, all ads are stored both on the system disk and the classified disk.

In the event that the classified disk crashes, the reserve (updated) classified disk and the system disk are put on either the primary system or the backup system and all new ads for the day are transferred from the system disk. This procedure will allow complete system backup in minimum time.

9.3.3 Software Backup

Copying the system pack provides complete software redundancy. Several copies of this disk are recommended.

CHAPTER 10

TYPESET SYSTEM EQUIPMENT OPERATION

This chapter gives procedures for system operation such as loading tape punches with paper tape, reloading line printer with paper, etc.

10.1 RELOADING THE TAPE PUNCHES

The supply of paper tape in each tape punch is replenished as follows:

1. Remove the tape punch from service by setting the control switch on the top to OFF.
2. Tear the paper tape close to the feed switch; remove the tape spool.
3. Load the tape spool and remount it on the tape punch.
4. Set the control switch to CONTINUOUS and clear the remaining paper tape from the tape channel by depressing the tape feed switch.

NOTE

Do not use the motor ON/OFF switch on the side of the punch to run the motor.

5. Thread the paper tape through the punch as directed in Bulletin 215B.
6. Start the tape by depressing the tape feed switch and pulling the tape gently, if necessary.
7. Set the control switch to AVAILABLE.

NOTE

The tape punch is not returned to service until the control switch is set to AVAILABLE.

10.2 LP11 PAPER INSTALLATION

The following procedure should be used when loading paper in the line printer:

1. Open front door of cabinet to gain access to maintenance panel and turn main ac power switch on. Verify that control panel POWER indicator lights.
2. Lift control panel TOP OF FORM switch and release to move tractors to correct loading position.
3. Open the drum gate by moving the drum gate latch knob to the left and up. Swing drum gate open.
4. Adjust right-hand tractor paper width adjustment for proper paper width by loosening the set screw on the 80-column model or by using the easy release mechanism on the 120-column model. Make certain that the right-hand tractor is tightened in place after it is adjusted.
5. Open spring-loaded pressure plates on both tractors.
6. Load paper so that a perforation is pointed to by the two red arrows (top-of-form indicators). Paper should lie smoothly between tractors without wrinkling or tearing the feed holes.
7. Close spring-loaded pressure plates on both tractors.
8. Adjust the COPIES CONTROL lever to the number of copies to be made. For example, set to 1-2 for single forms, set to 5-6 for six-part forms.

9. Close drum gate and lock into position with drum gate latch. After approximately 10 seconds, the control panel READY indicator should light. If it does not, check to see if any error is indicated. An error is indicated if one of the following lights is on: DRUM GATE, PAPER FAULT, or PRINT INHIBIT.
10. Lift TOP OF FORM switch several times to ensure that paper is feeding properly.
11. Set system to on-line mode by lifting ON LINE/OFF LINE switch and verifying that ON LINE indicator lights. At this point, printed matter can be aligned with the paper lines by rotating the paper vertical adjustment knob.

10.3 DISKPACK AND CARTRIDGE HANDLING

All Typeset-11 disk users should be familiar with the following procedures for disk pack and cartridge handling:

1. Diskpacks should be stored in clean cabinets when not in the drive. Each disk should have its own shelf or compartment. Packs should be stored in a horizontal position; however, packs should never be stacked one on top of another in a horizontal position. RK05 disk cartridges can be stored in a vertical or horizontal position.
2. Before storing the pack or cartridge, the access door should be closed tightly; the pack or cartridge should be enclosed in the plastic bag that comes with the diskpack.
3. The cartridge should be handled only by the front to rear axis, never on the side. If it is grabbed by the side, which has the air vent, it is:
 - a. Possible to break vent loose if plastic rivets are used.
 - b. Since vent is flexible steel, it may come in contact with disk surface and cause a scratch.

4. When removing the pack or cartridge from the cabinet, it should be put in the drive immediately after removing it from the plastic bag. If there is a pack or cartridge in the drive, it should be put into the plastic bag immediately after verifying that the access door is tightly closed.
5. Never touch the disk surface with bare hands.
6. Do not attempt to clean the disk surface or the inside of the diskpack or cartridge yourself. Your field office can recommend a cleaning service. The only way to prevent contamination of the diskpacks and a possible head crash is to exercise extreme care in handling packs, together with sensible cleanliness of the computer room. The recommended periodic preventive maintenance found in the disk maintenance manual should be followed.
7. At no time should the disk be carried in the trunk of one's car. The trunk is too dirty and the shock from the ride can cause it to move around inside the shell and chew up the retainer button. Always carry it on the front seat of the car.

The head assembly in a disk drive actually flies closer than a fingerprint smudge or large smoke particle. A buildup of dirt particles on a disk head is called oxide buildup. This oxide buildup causes improper head flight which may cause various types of problems in your Graphic Arts system and can lead to CATASTROPHIC DESTRUCTION OF HEADS AND DISK.

CAUTION

Do not attempt to use a noisy diskpack, cartridge or drive unit. If either drive emits a noise when it is running, shut the system down and use the backup typesetting system with a copy of the diskpack to continue processing. Do not attempt to remove the diskpack from the noisy drive or interchange the diskpacks in any way. A damaged disk pack could damage the other drive; conversely, a damaged drive could damage another diskpack.

CHAPTER 11

PREVENTIVE MAINTENANCE

11.1 COMPUTER AIR FILTER

Inspect the air filters once a month. If a filter is dirty, remove it, clean it with soap and water, dry it thoroughly, and re-install it.

11.2 TAPE READERS

Clean each tape reader at the beginning of each shift before processing any tape. Limit daily cleaning to the removal of tape fuzz and dust from the condensing lens and phototransistor apertures.

Thoroughly clean the interior of each reader weekly as follows:

1. Turn computer POWER key OFF (counterclockwise).
2. Remove the knob from the tape spring arm.

CAUTION

Do not remove the cover from the chassis unless the power is turned off. This action can damage the tape reader.

3. Pull the cover forward halfway, tilt it upward 45 degrees, and remove it from the chassis.

CAUTION

Do not disturb the optical alignment of the reader lamp or condensing lens.

4. Remove accumulated tape fuzz and dust from the inside of the cover, the reader lamp, the condensing lens, the sprocket wheel, the tape hold-down bracket, and the tape path guide. Use a camel hair brush to clean the parts.

11.3 TAPE PUNCHES

Empty the chad box on each tape punch at the beginning of each shift before perforating any tape. Do not allow chad accumulation to block the flow from the chad chute.

Thoroughly clean each tape punch once a week. Remove all tape chaf, chad, and dust from the area around the punch block and the tape-feed ratchet wheel. Use a firm brush and compressed air to clean this area.

11.4 PAPER TAPE SPECIFICATIONS

The chemical and optical properties of the paper tape used with the Typeset-11 System affect both the life expectancy of the tape punches and the accuracy of the tape readers. The recommended paper tape specifications are listed in Table 11-2. Any paper tape that conforms to these specifications can be used in both the tape punches and the tape readers without adversely affecting their operation. Avoid changes in tape color and extreme changes in translucence. Both properties affect the sensitivity adjustment of the tape readers.

11.5 DECTAPE TRANSPORTS

Remove the DECTape from the DECTape transport and clean each transport once a week to remove accumulated tape emulsion, oxide particles, and dust from the tape guide and the read/write head assembly. Use a camel hair brush to remove dust. Use magnetic tape head solvent and a Q-tip to remove oxide particles and tape emulsion from tape guide and head assembly.

11.6 LINE PRINTER

Refer to Maintenance Manual (DEC-11-HMFLA-A-D) for cleaning, ribbon installation, paper loading, and routine preventive maintenance instructions. The line printer does not require any lubrication.

**Table 11-1
Preventive Maintenance Checklist for Typeset-11 Systems**

	Computer	VT20 Terminal	Tape Readers	Tape Punches	DECtape Transports	DECdisk	Line Printer
Daily	None	None	Clean phototransistor apertures and condensing lens.	Check chad box; empty if necessary	None	None	None
Weekly	None	None	Clean reader lamp sprocket wheel, condensing lens, tape hold down bracket, tape path guide, and cover interior.	Clean area around punch block and tape feed ratchet wheel.	Clean tape guide and read/write head assembly.*	None	Inspect and clean*
Monthly	Inspect and clean air filter.*	Inspect and clean air filter (see VT20 User's Guide)	None	None Lubricate as directed in Bulletin 215B, Section 5.	Visually inspect program tape for translucent areas, streaks, or smears that indicate wear or damage. Inspect during program loading.	Inspect and clean air filter.*	None

(*Maintenance intervals can be increased or decreased, as necessary, to suit the environment of the equipment. Consult your Dec Field Service Representative.

11.7 DECDISK AIR FILTER

Refer to Maintenance Manual (DEC-11-HRFC-D) for inspection and cleaning instructions.

**Table 11-2
Paper Tape Specifications**

Property	Specification	Characteristic
Oil content	6% minimum 12% maximum	Uniformly impregnated with a lightly refined, parafin-base, light-grade lubricating oil that is light in color.
Translucence	32% to 28% maximum	Maximum transmission of incident light through the paper limited by combined oil content and paper opacity.
General quality	Standard grade contains less than 1% ash and .04% grit	
Color	Solid	Completely free of slime spots, pin holes, translucent spots, holes, tears, wrinkles, creases, and excess lint, fuzz, or dust. Consistently use the same color.

APPENDIX A

GLOSSARY

Term	Definition
algorithm	A set of well-defined operations performed in a prescribed sequence for the solution of a particular set of problems.
alphanumeric	Pertains to a character set that contains only the 26 letters and 10 numerals.
ASCII	The abbreviation for American Standard Code for Information Interchange. The internal code used by Typeset-11 to store text.
asynchronous	Pertains to operations that do not occur in any particular time sequence.
auxiliary storage	Devices that supplement the storage of core memory such as disk, DECTape, or magtape.
background processing	The automatic execution of lower priority computer programs when higher priority programs are not using the system resources.
binary	Pertains to the number system with a radix of two.
binary code	A code that makes use of exactly two distinct characters, 0 and 1.
bit	A binary digit. In the PDP-11 computer, each word is composed of 16 bits.
bootstrap	A technique or device designed to start up operations from an input device.
bug	A mistake in a program which causes erroneous results.
central processor unit	The unit of a computing system that includes the circuits controlling the interpretation and execution of instructions.
character	A single letter, numeral, or symbol used to represent information.
clear	To zero the contents of a storage location.
command	A user order to a computer system, usually given through a terminal.
console	An external panel on the computer or peripheral where controls and indicators are available for manual monitoring and operating of the device.

data	A general term used to denote any or all facts, numbers, letters, and symbols. It connotes basic elements of information which may be processed by a computer.
debug	To detect, locate, and correct mistakes in a program.
delimiter	A character that separates and organizes elements of data.
digital computer	A device that performs sequences of arithmetic and logical operations on discrete data.
directory device	A device (such as disk) which is partitioned by software into several distinct files. A directory of these files is maintained on the device to locate the files.
downtime	The time interval during which a device is inoperative.
dump	To copy the contents of all or part of core memory, usually onto an external storage medium.
execute	To carry out an instruction or run a program on the computer.
executive	The master control program that observes, supervises, controls, or verifies the operation of a system.
external storage	See auxiliary storage.
file	A collection of related records treated as a unit.
file name	Alphanumeric characters used to identify a particular file.
file name extension	A short appendage to the file name used to identify the type of data in the file.
file name version	An appendage to the file name and extension, which follows the extension, used to indicate that a file has been updated. Each time a file is edited, a new version number is assigned to the edited file; thus, the file with the largest version number is the latest copy of a story.
file structured device	See directory device.
flowchart	A graphical representation of an algorithm.
format	The arrangement of data.
full duplex	Describes a communications channel capable of simultaneous and independent transmission and reception.
half duplex	Describes a communications channel capable of transmission and/or reception, but not both simultaneously.
hardware	Physical equipment, e.g., mechanical or electrical devices.

initialize	To set counters, switches, and addresses to zero or other starting values at the beginning of a computer routine.
input	The transferring of data from auxiliary storage into the internal storage of the computer.
instruction	A statement that specifies an operation and the values or location of the operand.
leader	The blank section at the beginning of the tape.
machine code	A numeric code expressing operations built into the hardware.
macro instruction	An instruction in a source language that is equivalent to a specified sequence of machine instructions.
mass storage	See auxiliary storage.
memory	The alterable storage in a computer.
memory protection	A method of preventing the contents of some part of main memory from being destroyed or altered.
monitor	See executive.
multiprocessing	Utilization of several computers or processors to logically or functionally divide jobs or processes, and to execute them simultaneously.
multiprogramming	Pertains to the execution of two or more programs in core at the same time; execution cycles between programs.
off-line	Pertains to equipment or devices not under direct control of the computer.
on-line	Pertains to equipment or devices under direct control of the computer.
output	Information transferred from the internal storage of a computer to output devices or auxiliary storage.
parity	A method of checking the correctness of binary data.
password	An alphanumeric code used to validate access to the system.
program	A complete sequence of instructions and routines necessary to solve a particular problem.
queue	A waiting list. In Typeset-11, list of takes to be operated on (e.g., Punch queue, J and H queue).
radix	The base of a number system.
random access	A storage device in which the addressability of data is effectively independent of the location of the data, e.g., disk.

read	To transfer information from an input device to core memory.
real-time	Pertains to computation performed while the related physical process is taking place so that results of the computation can be used in guiding the physical process.
record	A collection of related items of data treated as a unit.
RSX-11D	A hardware-software complex which is the base for development of real-time systems such as Typeset-11.
serial access	A storage device in which data can only be addressed sequentially, e.g., line printer, paper tape.
software	The collection of programs and routines associated with a computer.
spooling	Moving data from one device to another through the use of queues.
storage device	A device in which data can be entered, retained, and retrieved.
string	A connected sequence of entities such as characters in a command string.
synchronous	Pertains to operations that occur in a particular time sequence.
system	A combination of software and hardware which performs a specific processing operation.
take	A job that Typeset-11 will process as a unit from input to output.
task	See program.
terminal	A peripheral device in a system through which data can enter or leave the computer.
timesharing	A method of allocating central processor time and other computer resources to multiple users so that the computer, in effect, processes a number of programs simultaneously.
UIC	A string of two numbers that represent an area of a disk.
user	Any person interacting with a computer system.
write	To transfer information from core memory to an output device, a peripheral device, or auxiliary storage.

APPENDIX B

COMMAND SUMMARY

A Typeset-11 file is defined by a general definition:

FILE = DEV:[G,U]FILENAME.EXT;VER

where:

DEV = device and unit number (default = system disk unit 0).

[G,U] = group-and-user number (default = logged in user).

FILE = file name with up to 9 alphanumeric characters.

EXT = file type with up to 3 alphanumeric characters (default = command dependent).

VER = version number (default = latest version).

Wherever FILE appears in a Typeset-11 command, this information must be inserted. That is, the format of the command is simply stated:

©P FILE<CR>

instead of:

©P DEV:[G,U]FILENAME.EXT;VER<CR>

B.1 QUEUE COMMANDS

COMMAND	FORM	USE
Activate	©Q QUEUENAME/AC<CR>	Activates the queue specified in the command.
Deactivate	©Q QUEUENAME/-AC<CR>	Deactivates the queue specified in the command.
Exit	©Q/EX<CR>	Causes the QUEUE MANAGER to exit. This command is used to shut down the system at the end of the day.
Kill Item	©Q QUEUENAME/KI:x<CR>	Remove item number x from the queue named in the command.
Modify Item	©Q QUEUENAME/MO:x/PR:y<CR>	Assign a new priority, y, to item number x in the queue named in the command.

B.2 QUEUE LIST COMMANDS

COMMAND	FORM	USE
Abort	©Q/AB<CR>	List abort reports.
All Users	©Q/A<CR>	List items queued by everyone in the system.
Beginning	©Q/B<CR>	List items that have been queued from the beginning of the day.
Done	©Q/D<CR>	List items that have been finished.
Error	©Q/E<CR>	List items that resulted in an error.
Format	©Q/F<CR>	List items with the last format used.
Item Numbers	©Q/I:x:y<CR>	List item numbers x through y.
Last Item	©Q/L<CR>	List the last item queued.
Line Printer	©Q/LP<CR>	This switch, when added to a list command will cause the list to be printed on the line printer.
Queue	©Q/Q:QUEUE_NAME<CR>	List items assigned to the queue named in the command.
Queues	©Q/QU<CR>	List all queue names.
Spoolers	©Q/SP<CR>	List all spooler names.
Status	©Q/ST<CR>	List items with timing information.
System	©Q/SY<CR>	List QUEUE MANAGER data.
Waiting	©Q/W<CR>	List items that are not completed.

B.3 OUTPUT COMMANDS

COMMAND	FORM	USE
Justify	<p>©J FILE<CR></p> <p>©JC FILE<CR></p> <p>©JP FILE<CR></p> <p>©JH FILE<CR></p> <p>©JS FILE<CR></p> <p>©JT FILE<CR></p>	<p>Processes the file named in the command through J and H. The file named in the command will be directed to the JH queue.</p> <p>Processes the file named in the command through J and H and generates a .SET file to be sent to CLASS AD as an insert.</p> <p>Processes the file named in the command through J and H and generates a .SET and a .PRF file. The .PRF file is sent to the line printer.</p> <p>Processes the file named in the command through J and H and generates a .PRF file and .SET file.</p> <p>Processes the file named in the command through J and H and generates only a .SET file to be output on the photo composition machine.</p> <p>Processes the file named in the command through J and H and generates only a .SET file to be output on the paper tape punch.</p>
Print	©P FILE<CR>	Used to request a line printer copy of a file from any storage device. This command causes the named file to be placed in the LP (Line Printer) queue.
Punch	©PU FILE<CR>	Used to output files to paper tape punches. This command causes the named file to be placed in the PP (Punch) queue.
Queue	©Q QUEUENAME = FILE<CR>	Direct a file to the queue named in the command. This command is used when a file must be directed to a specific unit number.
Set	©S FILE<CR>	Used to output files to an on-line photocomposition machine. This command causes the named file to be placed in the PC (Photocomposition) queue.

B.3.1 Justify Command Switches

SWITCH	USE
/DE	Deletes the file after the spooler has completed the indicated operation.
/HP	Generates a .PRF file but does not print it on
/HS	Does not queue .SET file.

SWITCH	USE
/NP	Does not generate a .PRF file.
/OK	Sends file to specified spooler even if there has been a warning level error.
/PF	Generates a .PRF file and prints it on line printer.
/PR:x	Assign a priority for the operation where x is a number from 0 to 255.

B.4 UTILITY COMMANDS

COMMAND	FORM	USE
Append	©AP FILEA = FILEB, FILEC<CR>	Connect two or more files together to form one continuous file. FILEA must exist in the system before the append command is used.
Copy	©CO FILEA = FILEB<CR>	Create FILEA from FILEB; both files exist in the user's data base area and will appear in the directory list.
Delete	©DE FILE<CR>	Deletes file named from the user's area. The version number must be specified or the * (wild card) must be used.
Directory	©D FILE<CR>	Lists file named on the user's terminal.
	©D<CR>	Lists all files in the user's area on the user's terminal.
Extract	©EX FILE<CR>	Extract the first line of the file named on the user's terminal.
	©EX<CR>	Extract the first line of all text files in the user's area on the user's terminal.
Kill	©KIL<CR>	Used to log off the system. KIL is the last command typed before leaving the terminal.
Merge	©ME FILEN = FILEA, FILEB <CR>	Connect two or more files together to form one continuous file. FILEN must not exist in the system before the merge command is used.

COMMAND	FORM	USE
Rename	©R FILEN = FILEO <CR>	Create a new file from an old file. In this example, FILEN replaces FILEO and FILEN is removed from the data base.
Using	©US .EXT	Used to change the default extension for create, edit, print, and justify commands.

B.5 MCR COMMANDS

COMMAND	FORM	USE
Abort	MCR>ABO TASKNAME<CR>	Allows the termination of task execution.
Dismount	MCR>DMO DEVICE:<CR>	Cause the device named in the command to become unavailable for storage and retrieval of data.
Enter Time	MCR>TIM TIME DATE<CR>	Enter correct time into the system.
Load	MCR>LOA DEVICE<CR>	Cause the indicated I/O handler to be resident in memory and ready for service.
Mount	MCR>MOU DEVICE:<CR>	Cause the device named in the command to become available for storage and retrieval of data.
Request	MCR>REQ TASKNAME<CR>	Request execution of tasks.
Unload	MCR>UNL DEVICE<CR>	Causes the device to release memory.

APPENDIX C

LOADING FORMATTER PROGRAMS USING THE ABSOLUTE LOADER

This Appendix contains procedures for loading the Bootstrap Loader and Absolute Loader which are required to load the paper tape formatter programs used to format the disks and DECTapes.

The Bootstrap Loader (Table C-1) must be toggled into memory from the switch register on the PDP-11/45 console to allow the Absolute Loader to be loaded into memory. The Bootstrap Loader is a short program which reads the Absolute Loader binary tape into memory. The Absolute Loader is a program on punched paper tape used to load the formatters for the Typeset-11 storage media, i.e., disks and DECTapes.

Table C-1
Bootstrap Loader

Location	Contents	Location	Contents
XX7744	016701	XX7762	116162
XX7746	000026	XX7764	000002
XX7750	012702	XX7766	XX7400
XX7752	000352	XX7770	005267
XX7754	005211	XX7772	177756
XX7756	105711	XX7774	000765
XX7760	100376	XX7776	172600

XX is dependent on the size of core memory as follows:

Core Size	XX	Core Size	XX
4K	01	20K	11
8K	03	24K	13
12K	05	28K	15
16K	07		

NOTE

Any location over 28K is not directly accessible through the switch register. Therefore, any bootstrap loader or MAINDEC should be loaded on below 28K.

After the paper tapes for the formatter are loaded according to the procedures in C.1 and C.2, the users should refer to one of the following appendices for the formatting procedure:

- Appendix D RP02 or RP03 Disk Packs
- Appendix E RS11 Disk
- Appendix F DECTape

C.1 BOOTSTRAP LOADING PROCEDURE

1. Depress HALT.
2. Set SWITCH REGISTER to XX7744.
3. Depress LOAD ADDRESS.
4. Set SWITCH REGISTER to 016701 (the contents of location XX7744 of the Bootstrap Loader).
5. Depress DEPOSIT.
6. Set SWITCH REGISTER to the contents of the next memory location in the Bootstrap Loader (Table C-1) and depress DEPOSIT. The address is incremented automatically each time DEPOSIT is depressed.
7. Repeat step 6 for all memory locations in the Bootstrap Loader.

After the Bootstrap Loader is loaded into memory it may be checked as follows:

1. Set the SWITCH REGISTER to XX7744 (address of first word in the Bootstrap Loader).
2. Press the LOAD ADDRESS key.
3. Depress the EXAMINE switch and observe the contents of the memory location on the ADDRESS/DATA lights. It should be 0167018 for location XX7744.
4. To observe the next location depress EXAMINE again.
5. Continue to depress EXAMINE until all memory locations in the Bootstrap Loader have been checked.

C.2 FORMATTER LOADING PROCEDURE

Perform the following steps to load the formatter paper tapes for the disks and DECTape.

1. Ensure that the Bootstrap Loader is loaded into core as explained in C.1.

2. Place Absolute Loader in PR68E with LEADER CODE (3528) over photocells. Press SELECT switch (lamp should light). Put 6/8 LEVEL switch on rear of reader in the 8 LEVEL position.
3. Put XX7744 on SR, press LOAD ADDRESS, then START.
4. When tape stops reading in, remove it.
5. Place appropriate Formatter Binary Tape in PR68 with blank tape over Photocells. Press SELECT switch (lamp should light).*
6. Put XX7400 on SR, press LOAD ADDRESS, then START.*
7. When tape stops reading in, remove it.*
8. Refer to appropriate Formatter Appendix for the operating instructions required to run the Formatter.

* Steps 5, 6, and 7 are referred to as 'loading the program by the Absolute Loader'.

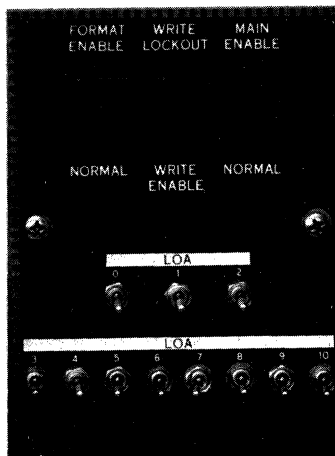
APPENDIX D

RP02/RP03 DISK DRIVE CONTROLS AND FORMATTING PROCEDURES

The RP02 and RP03 Disks are controlled by the RP11C Controller. The controls and a disk formatting procedure are discussed in the following paragraphs.

D.1 RP02/RP03 CONTROLS

A small panel, located in the lower right hand corner of the RP11, houses three rocker switches and eleven toggle switches (Figure D-1).



5914-5

Figure D-1 Maintenance Panel

The rocker switch, labeled FORMAT ENABLE/NORMAL, in the FORMAT ENABLE position, causes the RP11C to interpret a write header operation as a format operation, i.e., a bare disk pack is prepared for normal data storage operation by writing header information in the header fields, and clock information (0's) over the rest of the disk surface. While in the NORMAL position, this switch

causes the RP11C to interpret a Write Header operation as one that takes header information from PDP-11 memory and writes it in the address disk sector header area.

The rocker switch, labeled MAIN ENABLE/NORMAL, in the MAIN ENABLE position, allows the RP11C maintenance circuits to become active, providing for performance of controller maintenance without the RP02 Disk Drive. While in the NORMAL position, this switch disables the maintenance circuits providing for RP11 operation with the RP02 Disk Drive.

The eleven toggle switches labeled LOA00-LOA10 specify the upper limit of the write protected area for the Selected Address Lockout feature. Refer to Paragraph 3.10.2 of the RP11C Maintenance Manual for a discussion of the Lockout feature.

D.2 RP02/RP03 DISK FORMATTER

The RP11C (controller for RP02 and RP03) (DECSPEC-11-0381-D) consists of three parts. Part 1 formats an RP02 or RP03 Disk in the normal manner and checks all addresses for validity. Part 2 allows the operator to change the address of any desired sector. Part 3 formats and verifies the disk with the sequence of sector addresses specified by the operator.

D.2.1 Requirements

The system equipment requirements are as follows:

- Standard PDP-11/45 configuration
- RP11C Interface for RP03 or RP02
- One or more RP02 or RP03 Disks

D.2.2 Loading Procedure

Follow the loading procedure for Absolute tapes (see Appendix C).

D.2.3 Standard Formatter

D.2.3.1 Starting Procedure

To start the program, LOAD ADDRESS 6008 and press START.

D.2.3.2 Operating Procedure

Once started the program prints UNIT and waits for input. Respond with the relevant octal number (0-7) and terminate with a carriage return (<CR>). The TTY then prints:

SET THE FORMAT ENABLE SWITCH.

SET THE RP11 WRITE ENABLE SWITCH.

SET THE SELECTED UNIT WRITE ENABLE SWITCH.

STRIKE ANY TELETYPE KEY WHEN READY.

Striking any key causes the formatting operation to begin. When the disk has been formatted, the TTY prints:

RESET THE FORMAT ENABLE SWITCH TO NORMAL.

STRIKE ANY TELETYPE KEY WHEN READY.

Striking any key causes the program to enter a read/compare header sequence. This check routine may be restarted at address 12008 for diagnostic purposes. The program recycles when done.

D.2.4 Starting Procedure

To start the program, LOAD ADDRESS 20008 and press START.

D.2.4.1 Operating Procedure

Once started, the program queries for the unit number as in Paragraph D.2.4.2. The program then prints:

CYLINDER TRACK SECTOR

OLD:

and waits for input.

Type the physical cylinder, track, and sector of the desired address; terminate the first two with a space and the last with a carriage return. The program then prints:

NEW:

and waits for input.

Type the desired address in the same sequence as above. First the program will rewrite and then read the desired header to determine validity. The program recycles when done.

D.2.5 Special Formatter

D.2.5.1 Starting Address

To start the program, LOAD ADDRESS 30008 and press START.

D.2.5.2 Operating Procedure

Once started, the program queries for the unit number as in Paragraph D.2.5.3. The program then prints:

INPUT THE SECTOR NUMBERS (0-9) IN THE ORDER DESIRED.

0:

Respond with the first desired sector number. The other nine numbers are requested and specified in the same manner. Once a sector number has been used it may not be specified again.

After the last parameter has been processed, the program writes the disk to the desired format and then enters a read/compare header sequence to ensure the validity of all addresses. This check routine may be restarted at address 32528 for diagnostic purposes. The program recycles when done.

D.2.5.3 Parameter Changing

Any of the input sequences may be aborted and recycled before the last termination by typing an illegal character.

D.2.6. Errors

D.2.6.1 Error Halt

The standard error halt occurs at address 71268. To retry the test, press CONT.

D.2.6.2 Error Printouts

Error printouts contain the error address, CPU status at error time, and relevant information concerning the particular failure. This information may be the contents of the RP11C status registers or Good/Bad compare data. If the error occurred in a subroutine, the address of the subroutine call is also given.

Refer to the program listing at the stated addresses to determine the cause of the error.

APPENDIX E

RF11/RS11 CONTROLS, INDICATORS, AND FORMATTING

E.1 CONTROLS AND INDICATORS

The RF11/RS11 controls and indicators consist of RS11 controls and RF11 indicators, respectively. The RS11 controls are the WRITE LOCK SWITCHES of the RS11 Disk unit. The RF11 indicators are located on the indicator panel of the master cabinet.

E.1.1 RS11 Controls

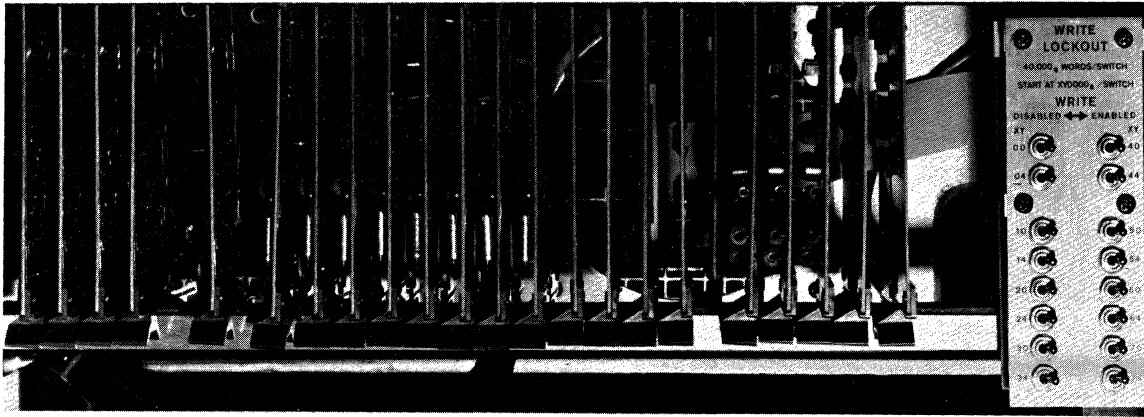
Each RS11 Disk unit contains a set of sixteen switches designated WRITE LOCK SWITCHES. These switches are capable of locking out any combination of sixteen 16,384 word blocks (8 tracks) (refer to Table E-1). Each switch can inhibit the computer from overwriting on eight separate tracks (Figure E-1). A write locked disk will cause an error flag (WLO) to be set when an attempt is made to write on a locked section.

E.1.2 RF11 Indicators

The RF11 indicator panel shows the states of most of the register bits, along with some flip-flop states. These indicators are divided into address (Table E-2) and error indicators (Table E-3) and are labeled on the panel (Figure E-2) as to the bit and the register, or to what the bit of flip-flop defines.

Table E-1
RS11 Controls

Switch	Tracks Decimal	Tracks Octal	
00	0- 7	0- 7	
04	8- 15	10- 17	
10	16- 23	20- 27	
14	24- 31	30- 37	
20	32- 39	40- 47	Matrix 0
24	40- 47	50- 57	
30	48- 55	60- 67	
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5003-1

Figure E-1 Write Lockout Switches

Table E-2
RF11 Address Indicators

Address Indicators	Function
DISK SEGMENT	The dynamic shift register that assembles the serial address from the disk. If these indicators are dimly lit, the disk is communicating with the control.
WORD ADDRESS	Displays bits 00 through 10 of the DAR register and indicates the segment on the disk a transfer is to be made to or from.
TRACK ADDRESS	Displays bits 11 through 15 of the DAR register and bits 00 and 01 of the DAE registers.
DISK ADDR	Displays bits 02 through 04 of the DAE DAE register and indicates the disk unit to be selected.
XM	EXtended Memory bits. Indicates A16 and A17 on the Unibus when the control is Bus Master.

Table E-3
RF11 Error Indicators

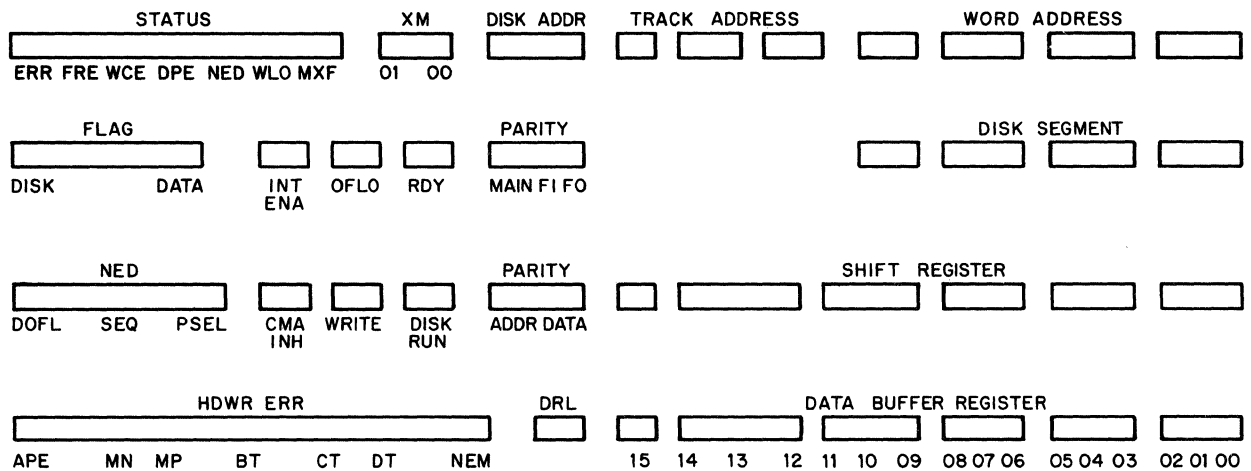
Error Indicators	Function
ERR	ERRor. Indicates that an error exists in the control. If FRZ is not lit, it is a "soft" error.
WCE	Write Check Error. Indicates that the control was performing a WRITE CHECK command and the word read from the disk did not compare with the word taken from core. Causes ERR to light.
DPE	Data Parity Error. Indicates that the data being read from the disk did not compare with the computed parity. Causes ERR to light.
DT	Data Timing error. Indicates that the data word has missing or extra bits. Causes ERR to light.
NED	Non-Existing Disk. Causes ERR to light.

Table E-3 (Cont)
RF11 Error Indicators

Error Indicators	Function	Error Indicators	Function
DOFL	Disk OverFLow. Indicates that the control sequenced into disk 108.	APE	Address Parity Error. Indicates that the address being read from the disk did not compare with the computed parity. Causes FRZ to light.
SEQ	SEQuence error. Indicates the control sequenced into a non-existing disk in the system.	MN	Missing Negative or extra positive pulse from the A Timing Track. Causes FRZ to light.
PSEL	Program SElect error. Indicates the program selected a non-existing disk.	MP	Missing Positive or extra negative pulse from the A Timing Track. Causes FRZ to light.
WLO	Write LockOut. Indicates the control tried to write into a write-protected area of the disk. A WLO switch on the RS11 chassis is enabled. Causes ERR to light.	BT	B Timing track error. Indicates that there was an extra or missing pulse from the B Track. Causes FRZ to light.
MXF	Missed XFer. Indicates the control was unable to perform a transfer for three revolutions of the disk. Caused by the processor halting or ignoring an NPR request, failure of the control to find the disk address, or failure of the control to find data. Causes ERR to light.	CT	C Timing track error. Indicates that there was an extra or missing pulse from the C Track. Causes FRZ to light.
DRL	Data Request Late. Indicates the control is ready to transfer data and the previous data has not been taken. Does not stop the current function or cause an error.	NEM	Non-Existing Memory. Indicates the control put an address on the Unibus for which no Slave Sync returned for 20 usec. Cause FRZ to light.
FRZ	FReeZe. Indicates a "hard" error occurred in the control. Causes ERR to light.	FCTN	FunCTioN register. Indicates the functions being performed by the control; for maintenance functions, the disk signals must be simulated by the program. FO lit indicates a Write. FO and F1 lit indicates a Write Check. F1 indicates a Read.

Table E-3 (Cont)
RF11 Error Indicators

Error Indicators	Function	Error Indicators	Function
PARITY ADDR	Indicates the parity of the disk addresses read from the disk surface.	CMA INH	Current Memory Address INHibit. Indicates that the program has selected a one-word transfer location in core. This prevents the CMA register from incrementing by two after each transfer.
DATA	Indicates the parity of the data word being read from the disk surface.	OFLO	OverFLOW. Indicates that the control has completed a block of transfers and that the Word Count register has gone to 0.
FLAG DISK	Indicates that an error condition exists in the control or that the control is ready to execute a function. If INT ENA is set, the control raises an Interrupt on the BR-5 level.	WRITE	Indicates that the control is turning on the writers in the RS11.
DATA	Indicates that the control is making an NPR request.	DISK RUN	Indicates that the control is performing a transfer with the disk.
INT ENA	INTerrupt ENABle. Indicates that the control is conditioned to raise an Interrupt when Disk Flag is asserted.	RDY	ReaDY. Indicates that the control is ready to perform a function. RDY is the complement of the CONT BUSY signal in the control.



11-0240

Figure E-2 RF11 Indicators

E.2 RF11/RS11 FORMATTING

The RS11 disk is formatted at DEC depots prior to shipment to the user's site. Any new disks purchased for the system will also be formatted by DEC. If for any reason (system failure) the timing tracks (format) are erased, DEC Field engineers must return the disk to a depot to be reformatted.

APPENDIX F

DECTAPE CONTROLS AND FORMATTING

F.1 DECTAPE CONTROLS

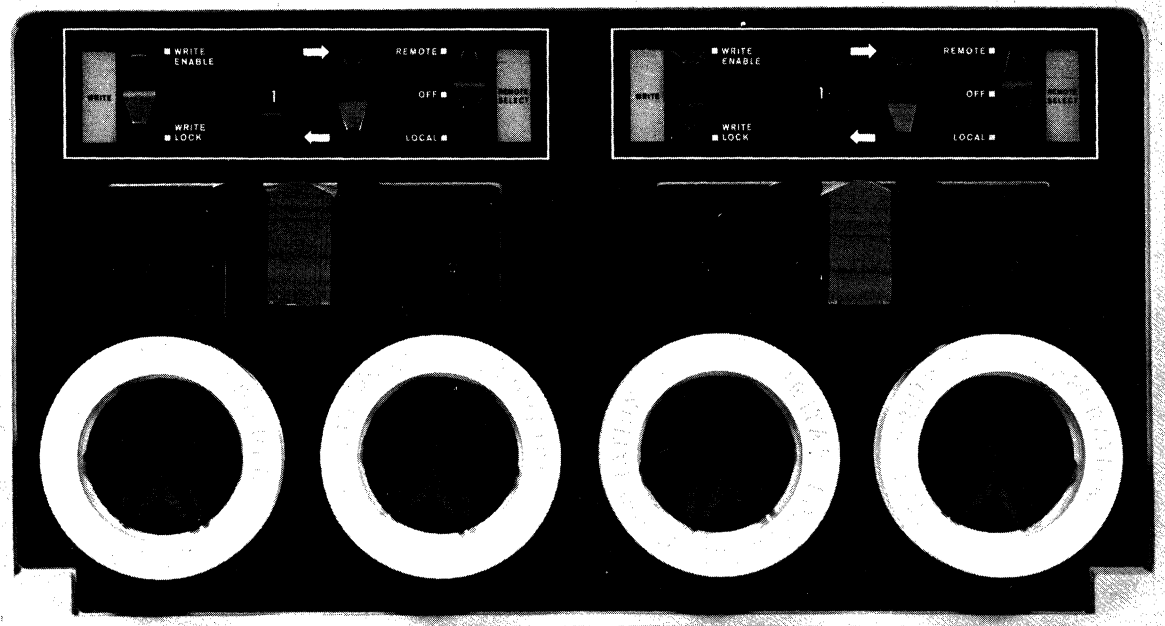
The DECTape controls are explained in Table F-1 and illustrated in Figure F-1.

Table F-1
TU56 DECTape Transport Controls

Control	Function	Remarks
REMOTE/OFF/LOCAL switch	<p>Controls on-line and off-line operation of the tape unit.</p> <p>REMOTE position – allows on-line system operation under program control.</p> <p>LOCAL position – disconnects the tape transport from manual off line operation.</p> <p>OFF position – de-energizes tape drive reel motors to place the tape unit completely off-line.</p>	<p>Tape unit is not completely on-line until the tape unit has been selected by the program and the unit selector switch.</p> <p>The read/write head channels are not connected to the controller until the program selects a tape unit.</p> <p>Tape unit cannot be remotely selected when switch is in LOCAL or OFF.</p>
FWD/REV switch	<p>Moves tape in selected direction during off line use of transport. Tape direction is indicated by the appropriate white arrow.</p> <p>FWD position, when depressed, moves tape in forward direction as long as switch is held. Tape motion stops when switch is released.</p>	<p>This switch is disabled unless the switch is set to LOCAL position.</p> <p>Center (HOLD) position is the normal rest position of the switch. It retains equal tension on tape, but there is no tape motion.</p>

Table F-1 (Cont)
TU56 DECtape Transport Controls

Control	Function	Remarks
Unit selector	The 8-position thumb wheel switch permits remote selection of a tape unit by the program. The tape unit is selected for use when the selection code of the TC11 Controller corresponds to the numeral on the unit selector switch.	Enables WRITE ENABLE/WRITE LOCK switch of the specific unit selected by the controller.
REMOTE indicator lamp	When lit, indicates that the tape unit is on-line. Tape unit is on-line when: REMOTE/OFF/LOCAL switch is in the REMOTE position. Unit selector switch setting agrees with the controller selection code and the function is other than SAT or the MAINT bit is not set.	When a tape unit is selected, the controller and the REMOTE/OFF/LOCAL switch is in REMOTE, the REMOTE indicator lights to indicate that the tape unit is on-line.
WRITE ENABLE/WRITE LOCK	Determines whether or not the TC11 Controller can write on the tape. WRITE ENABLE position, when set to this position, permits the TC11 Controller to write on the tape (if selected). Lights the WRITE ENABLE indicator. WRITE LOCK position, when set to this position, prevents the controller from writing on the tape. If controller attempts any write operation (WDATA; WALL, WTRM) the illegal operation (ILO) indicator lights.	This switch is enabled by the unit selector switch. Stops tape motion during on-line operation. The ILO indicator is on the TC11 Controller maintenance panel.
WRITE ENABLE indicator	When lit, indicates that the WRITE ENABLE/WRITE LOCK switch is set to WRITE ENABLE	If WRITE ENABLE/WRITE LOCK switch is set to WRITE ENABLE but the tape unit is not selected, this indicator still lights.



5062-1

Figure F-1 DECTape Controls

F.2 DECTAPE FORMATTER

The TC11 DECTape Formatter is a program for formatting DECTapes on Unit 0 with a standard format of 578 blocks of 256 words each.

F.2.1 Loading Procedure (Using PR68-E)

The procedure for loading Absolute Binary (Appendix C) tapes should be followed.

F.2.2 Preliminary Operations

- a. Mount a DECTape on Unit 0, wrapping enough turns to ensure tension.
- b. Set the transport ON-LINE with WRITE ENABLE on.
- c. Set the TC11 WRITE ALL and WRITE T+M switches to (up). The switches are located on the maintenance panel (Figure F-2).

F.2.3 Starting Procedure

LOAD ADDRESS 6008 into the SWITCH REGISTER and press START.

F.2.4 Operating Procedure

- a. Once started, the program writes all Timing and Mark Track information in one forward pass and then halts at address 10508.
- b. If the tape has run off the reel, remount it. Reset the WRTM switch (down) and press CONTINUE. The tape will back out for three blocks, then turn around and write the complement obverse of the last block number (11018) in Write all in all data slots until the End Zone is sensed. The tape then reverses and writes relevant information in all blocks down through 0 in Write all.
- c. The tape then reverses and alternately searches for each block number in sequence then changes to Read all to check each block for correct data (0's).

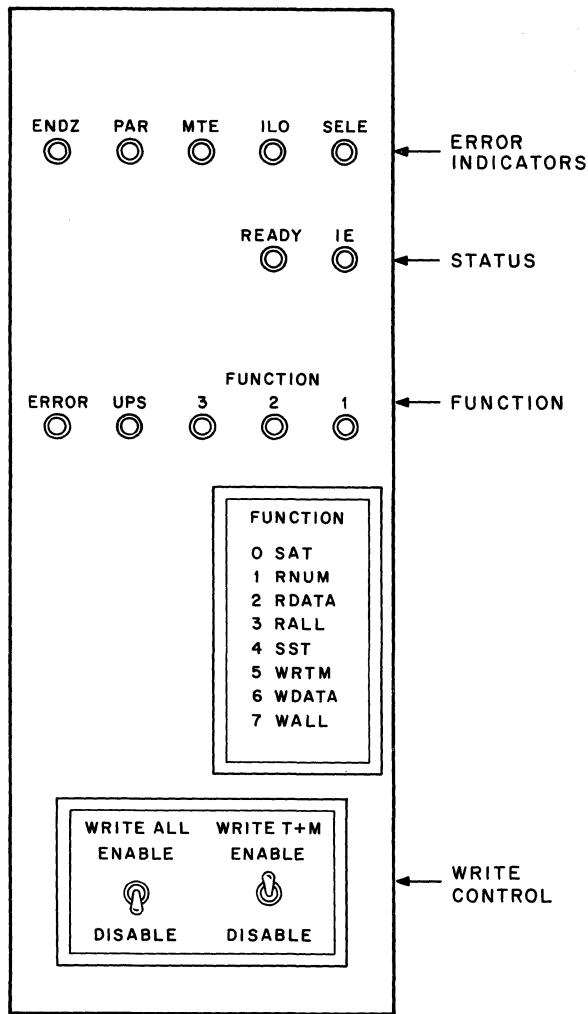


Figure F-2 Maintenance Panel Controls and Indicators

- d. After all blocks have been verified forward the tape is reversed again and alternately searches for each block number in reverse sequence. Then it writes each block to 0's in Write Data mode. This ensures parity conversation if the tape is to be read before being rewritten.
- e. The program then halts at address 23168 To format another tape, perform the operations in section F.2.3 then press CONTINUE.

F.2.5 Errors

F.2.5.1 Error Halt

Address 30128 is the common error halt. Press CONTINUE to proceed from it.

F.2.6 Error Printouts

Error printouts consist of:

- a. Address of error.
- b. Address of subroutine call if error is in a subroutine.
- c. Processor status at time of error.
- d. An error message.
- e. Optional relevant data (Good, Bad, etc.).

APPENDIX G

RK05 DISK DRIVE CONTROLS AND FORMATTING PROCEDURE

G.1 CONTROLS AND INDICATORS

The controls and indicators (Figure G-1) required for normal operation are located on the front of the drive cabinet. Table G-1 describes the function of each control or indicator.

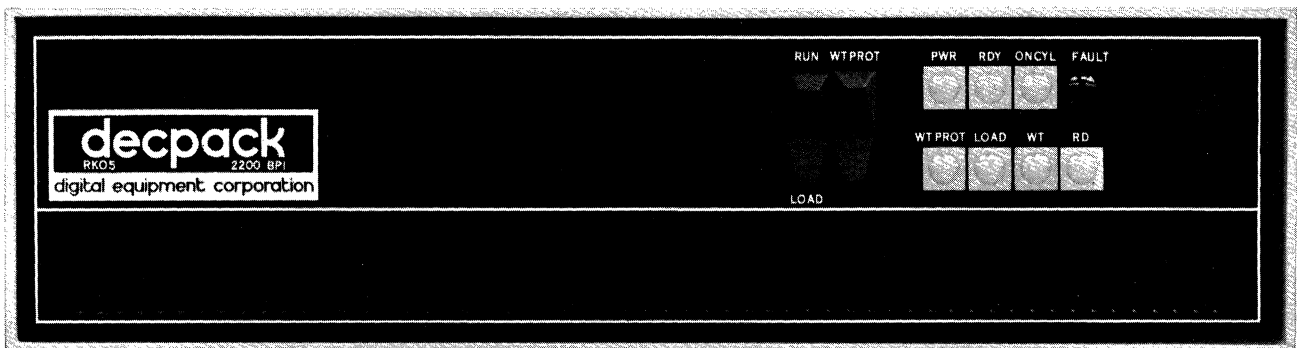
Only standard DEC surface format is available (i.e., sectors numbered in the normal numerical sequence 0.1.2.3.4.5, etc.).

G.2 FORMATTING RK11 DISK CARTRIDGES

The RK11 Disk Formatter program (MAINDEC-11-D5HA-PB2) is designed to write and check the format of the complete disk cartridge.

G.2.1 Program Loading

Load the formatter (MAINDEC-11-D5HA-PB2) program into any R/W memory bank using the Absolute Loader (Appendix C).



6474-6

Figure G-1 Controls and Indicators - RK05

**Table G-1
Controls and Indicators**

Control /Indicator	Purpose	Control /Indicator	Purpose
RUN/LOAD (rocker switch)	<p>RUN position: all interlocks are safe</p> <ol style="list-style-type: none"> Locks the drive front door. Accelerates the disk to operating speed. Loads the read/write heads. Lights the RDY indicator. <p>Placing this switch in the LOAD position:</p> <ol style="list-style-type: none"> Unloads the read/write heads. Stops the disk rotation. Unlocks the drive front door. Lights the LOAD indicator. 	RDY (indicator)	<p>Lights when:</p> <ol style="list-style-type: none"> The disk is rotating at the correct operating speed. The heads are loaded. No other conditions are present (all interlocks safe) to prevent a seek, read, or write operation. <p>Goes off when the RUN/LOAD switch is set to the LOAD position.</p>
		ON CYL (indicator)	<p>Lights when:</p> <ol style="list-style-type: none"> The drive is in the Ready condition. A seek or restore operation is not being performed. The read/write heads are positioned and settled. <p>Goes off during a seek or restore operation.</p>
WR PROT (rocker switch spring-loaded off)	<p>Placing this momentary contact switch in the WT PROT position lights the WT indicator and the FAULT indicator if lit.</p> <p>Placing this switch in the WT PROT position a second time turns off the WT PROT indicator and allows a write operation.</p>	FAULT (indicator)	<p>Lights when:</p> <ol style="list-style-type: none"> Erase or write current is present without a WRITE GATE. The linear positioner transducer lamp is inoperative.
PWR (indicator)	Lights when operating power is present. Goes off when operating power is removed.		Goes off when the WT PROT switch is pressed or when the drive is recycled through a RUN/LOAD sequence.

**Table G-1 (Cont)
Controls and Indicators**

Control /Indicator	Purpose
WT PROT (indicator)	<p>Lights when:</p> <ul style="list-style-type: none"> a. The WT PROT switch is depressed. b. The operation system sends a Write Protect command. <p>Goes off when the WT PROT switch is pressed a second time or when the drive is recycled through a RUN/LOAD sequence.</p>
LOAD (indicator)	<p>Lights when the read/write heads are fully retracted and the spindle has stopped rotating.</p> <p>Goes off when the RUN/LOAD switch is set to the RUN position.</p>
WT (indicator)	<p>Lights when a write operation occurs. Goes off when the write operation terminates.</p>
RD (indicator)	<p>Lights when a read operation occurs. Goes off when the read operation terminates.</p>

- c. Verify that light labeled PWR is on.
- d. Wait for light labeled LOAD to come on.
- e. Verify that lights labeled RDY, ON CYL, FAULT, WT, and RD are off.
- f. Open access door.
- g. Insert cartridge.
- h. Close access door.
- i. Set switch labeled RUN/LOAD to the RUN position.
- j. Wait for lights labeled RDY and ON CYL to come on.
- k. Toggle switch labeled WT PROT until light labeled WT PROT goes on and off.
- l. Toggle switch labeled WT PROT until light labeled WT PROT goes off.
- m. Verify that lights labeled FAULT, WT, RD, and LOAD are off.

G.2.3 Format Program

- a. Make ready all drives to be formatted using the RK05 drive cartridge mounting procedure in Paragraph 2.4.4.
- b. Set switch labeled RUN/LOAD to the LOAD position on all drives not being formatted.
- c. Set switch labeled ON/OFF to the ON position on all drives not being formatted.
- d. Set the SWITCH REGISTER to 00650 and press LOAD ADDRESS.
- e. Set the SWITCH REGISTER to 00000 and press START.
- f. Set SWITCH REGISTER Switches 10, 1, and 0 to 1 (these switches must be raised).
- g. Wait 60 seconds and set switches 10, 1, and 0 to 0 (switches are down).

G.2.2 RK05 Drive Cartridge Mounting Procedure

The following is the correct cartridge mounting procedure for the RK05 Disk Drive. Any deviation encountered during this procedure will be considered an error condition.

- a. Set switch labeled RUN/LOAD to the LOAD position.
- b. Set switch labeled ON/OFF to the ON position.

APPENDIX H

LA30 CONTROLS AND INDICATORS

H.1 CONTROLS AND INDICATORS

Controls and indicators for the LA30 are listed in Table H-1 and shown in Figures H-1 and H-2. (Figure H-2 shows the controls and indicators for the serial version of the LA30; the parallel version has only the READY lamp and the LOCAL LINE FEED switch.)

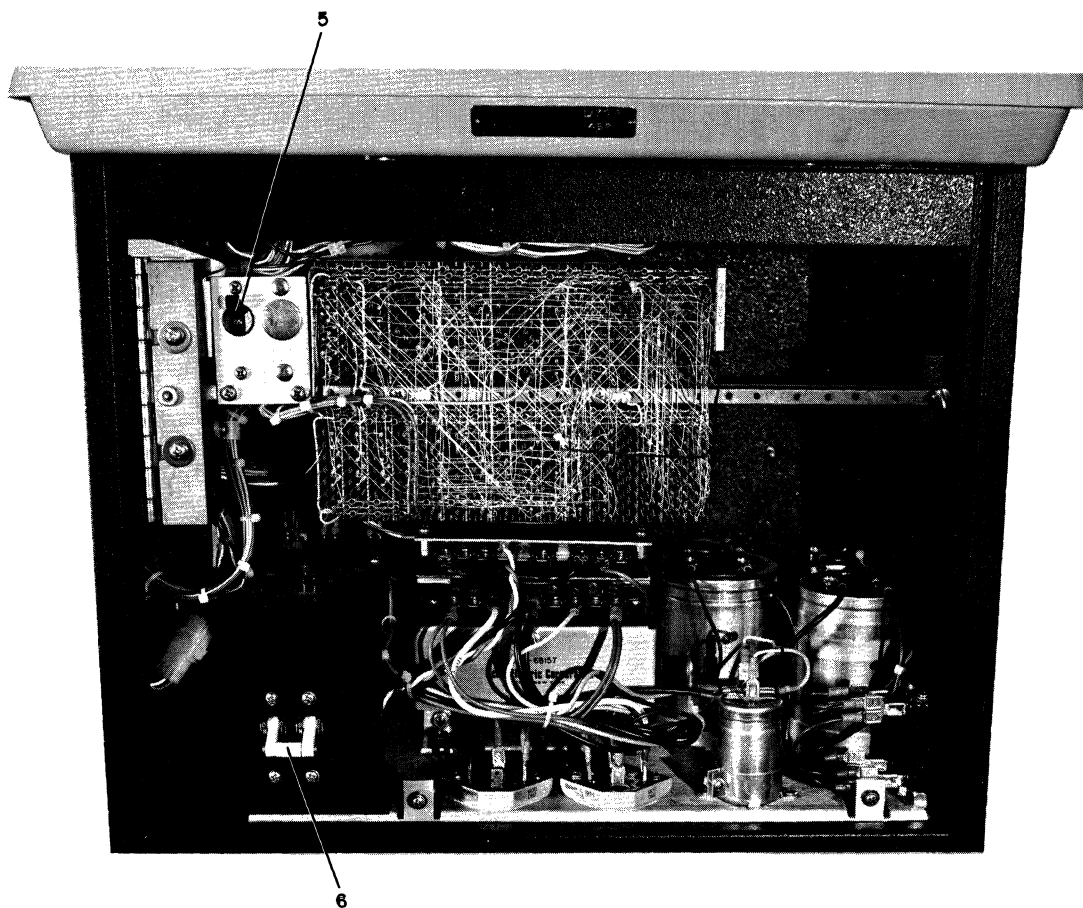
Table H-1
LA30 Controls and Indicators

Index	Control /Indicator	Function	Index	Control /Indicator	Function
1	READY	Lamp - Indicates power up on printer electronics and that the DECwriter is READY for use. Indicates an interrupt is enabled by keyboard electronics, if INT bit is set by software.	3	MODE LOCAL LINE	2-Position Switch - Selects either local or on-line operation.
			4	B A U D RATE 110, 150, 300	3-Position Switch - Selects the baud rate clock frequencies for 110, 150, and 300 baud.
2	LOCAL LINE FEED	Switch - When depressed, causes a local line feed to be applied to the printer without a code being sent out to the computer. This control will also disrupt printing, but no characters will be lost.	5	MOTOR POWER	Breaker(CB2) - Applies power to printer stepping motor electronics.
			6	AC POWER	Breaker(CB1) - Applies ac power to the unit power supply.



6209-2

Figure H-1 LA30 Keyboard and Controls



6320-1

Figure H-2 LA30 Power Controls

APPENDIX I

TAPE FORMATS

I.1 INPUT TAPE FORMAT

The input tape format is:

`$FILE.EXT:x[G.U]/SW$....TTS CODES`

The header at the beginning of the tape identifies the story file, the group (G), the User (U), and a switch. The switches that may be used on the input to control file flow and priority are listed in Paragraph 3.4.2. This information is recorded in the directory so the file can be retrieved from the disk. If no group-and-user number is specified, the take is filed under the UIC assigned to the input device. If no priority is specified, a priority of 10 is assigned to the input file. The TTS codes and corresponding functions are supplied with the system at the time of installation. Tapes that contain more than one story may be input to the system if [ETK] is punched on the tape.

Example:

`$FILE.EXT:x[G.U]/SW$....TTS codes [ETK]`
`$FILE.EXT:x[G.U]/SW$....TTS codes`

I.2 OUTPUT TAPE FORMAT

Each tape punched on the system has the file name, extension [UIC], machine number, machine setup number, and column width written at the beginning of the tape as follows:

`FILE.EXT [UIC] Mx Sy Wzzz...TTS codes`

where:

x = machine number
y = setup number
zzz = column width in inches

This identifies and supplies data on all files that are punched on the system.

APPENDIX J

FORMATTING DISKS USING ROLLIN

ROLLIN is a stand-alone program which is loaded from DECTape into core memory. The ROLLIN program is used to format Typeset-11 disk packs and cartridges.

J.1 LOADING ROLLIN PROGRAM

To load ROLLIN from DECTape proceed as follows:

1. Mount the DECTape reel labeled ROLLIN on DECTape unit 0 and set the DECTape transport switches to WRITE LOCK and REMOTE.
2. At the CPU, set ENABLE/HALT to HALT.
3. If the BM792-YB Bootstrap Loader is in the system, perform the following:
 - a. Set the SWITCH REGISTER to 173100.
 - b. Depress LOAD ADDRESS (LA).
 - c. Set ENABLE/HALT to ENABLE.
 - d. Set SWITCH REGISTER TO 1177344.
 - e. Depress START.
4. If the MR11-DB Bootstrap Loader is in the system, perform the following:
 - a. Set the SWITCH REGISTER to 173120.
 - b. Depress LOAD ADDRESS (LA).
 - c. Set ENABLE/HALT to ENABLE.
 - d. Depress START.

After step 3 or 4 is performed, ROLLIN is read from DECTape and the ROLLIN program starts. The message:

```
ROLLIN Vxx  
#
```

where:

xx is the current version number

is printed at the terminal. The pound symbol (#) indicates that the terminal is ready to receive commands.

After the ROLLIN Program is loaded, perform the appropriate procedure in one of the following paragraphs to format the RP03 or RK05 disks.

J.2 FORMATTING RK05 DECPACKS

To format an RK05 DECPack, make sure a formatted DECPack is mounted on RK05 unit 0 and write protected. Mount the pack to be formatted on another drive and write enable. Proceed as follows:

```
#DKx:/FO<DK0:<CR>
```

where:

x is the unit number of the RK05 to be formatted.

After the command string is typed, the terminal will type:

```
STARTING RK FORMAT PASS
```

When formatting is completed, the message:

```
END RK FORMAT
```

will be printed at the terminal.

J.3 FORMATTING RP03 DISK PACK

To format an RP03 Disk Pack, ensure a formatted Disk Pack is mounted on RP03 unit 0 and write protected. Mount the pack to be formatted on another drive and write enable. Proceed as follows:

```
#DPx:/FO<DP0:<CR>
```

where:

x is the unit number of the RP03 to be formatted.

After the command string is typed, the message:

```
SET FORMAT ENABLING SWITCHES  
THEN TYPE CR
```

will be printed at the terminal. The format enable switch is located behind one of the panels in front of the RP11C Controller. During the formatting operation, the terminal will print out messages which instruct the operator to set and disable the format toggle switch on the RP11C Controller.

When the formatting operation is completed, the message:

```
DISABLE FORMAT SWITCHES THEN TYPE  
CR
```

will be printed at the terminal.

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